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## Musicoin: Free Creations While Rewarding Creators (v 0.8)

(v0.9 has been released [here](#))

**Abstract.** *This article describes Musicoin, a decentralized system for the publication and consumption of music, which combines a cutting-edge cryptocurrency to a peer-to-peer file sharing network. Musicoin allows musicians to license their content as a “coded contract” directly to a decentralized database called a “blockchain”. These contracts automate the collection and distribution of royalty payments and remain in the control of the artists themselves. Listeners can access a global catalog of music stored on a peer-to-peer network and pay artists directly using digital currency, based on their usages. Ease-of-use tools can be designed to allow a seamless experience for both listeners and musicians, and an open protocol will allow third-parties to build a rich ecosystem of value-added software and services. By providing a distributed and highly transparent platform that connects musicians and listeners directly, Musicoin lays the groundwork for a new age of music that is sustainable, borderless, and fair to all stakeholders.*

**T**he digitization of the music industry began in the 1980s and, in hindsight, was inevitable. By the late 1990s, with the rise of Napster, digitization officially became a disruptive force, and one that music industry is still grappling with today. At the heart of the struggle is a system of licensing, distribution, and promotion that dates back more than a century. As technology outpaces (and in some cases simply circumvents) the traditional system, there is growing concern and consensus that the century-old music industry might collapse under its own weight after nearly two decades of decline.

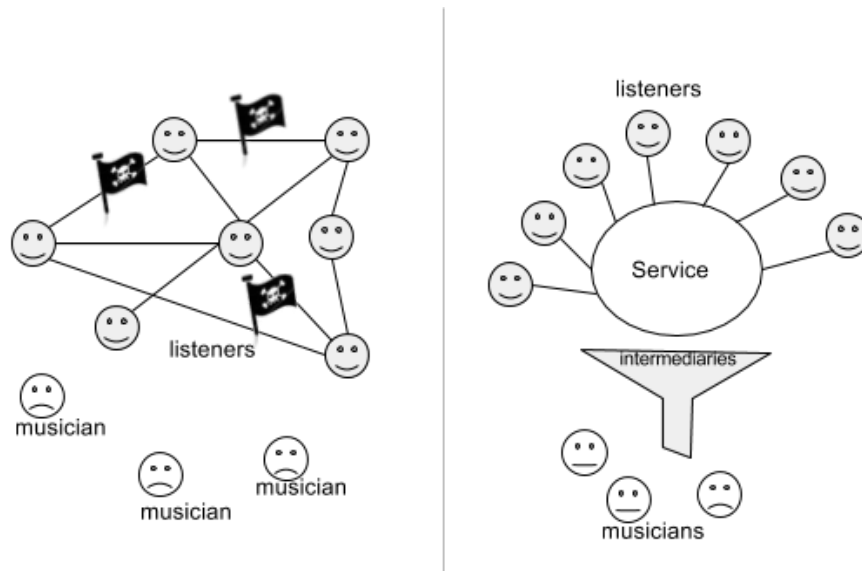
And, while the transition to digital music has largely been a boon to listeners, who now enjoy access to an ever-expanding catalog of music through services like Spotify and iTunes, it has been difficult at best for musicians. The industry still keeps the large majority of revenue and is painfully slow to cut a check to musicians, making it increasingly hard for musicians to earn a living.

However, the same technological advancement that has wreaked havoc on the music industry for the past 20 years also presents us with an extraordinary opportunity to redefine the relationship between musicians and listeners. Digital currency (or “cryptocurrency”), in particular, will allow nearly instantaneous payments with minimal transaction cost. “Coded contracts” will allow musicians to maintain control of licenses, rather than relying on a third party.

The remainder of this paper gives a brief overview of two relatively recent and dramatic changes to the way people interact with music, both of which have ultimately failed to produce a sustainable and fair system. Finally, a detailed proposal for a path forward is given.

## Two Failed Models

Napster, which was the first peer-to-peer (P2P) file sharing network widely adopted, marked the beginning of the end for the traditional approach to music distribution and consumption. In many people’s eyes, it’s seen as the assassin of the music industry. In this model (which we call the “Torrent Model”), content was casually shared on a P2P network and downloaded by other users without the musician’s permission and without sending any form of compensation. This model is doomed by itself, not only for its legal breach, but also because it is not sustainable as musicians’ benefits were totally annihilated.



**Torrent Model** (left), where musicians are entirely disregarded. The **Subscription Model** (right), which retains all of the complexity and inefficiency of the legacy music industry, and ultimately pays musicians a small fraction of total revenue.

More recently, a “Subscription Model” has become popular (see Figure 1). In this model, services deliver streaming content based on a

centralized catalog and charge users a level of subscription fee (mostly 9.99USD/month), which is often overpriced. In turn, these streaming services (like Spotify) pay labels and publishers a big portion of revenue to acquire licenses.

This model is an improvement over the Torrent Model, since revenue is actually collected from listeners, nevertheless, the portion of that revenue makes to musicians is extremely small, because there are so many intermediaries taking a major cut. Ultimately, over **80%** of royalty fees were kept by intermediaries. The reason for this is largely historical. Prior to the digital age, musicians needed these intermediaries to help them organize, plan, record, produce, and distribute their music. This spawned the creation of many agencies in the music industry, such as music labels, PROs, distributors, retailers, studios, PR agencies, and marketing agencies. After the Digital Millennium Copyright Act (DMCA), more agencies were created, and all of which took their share of revenue. If we look at the income distribution structure, we would be really surprised how little we pay musicians.

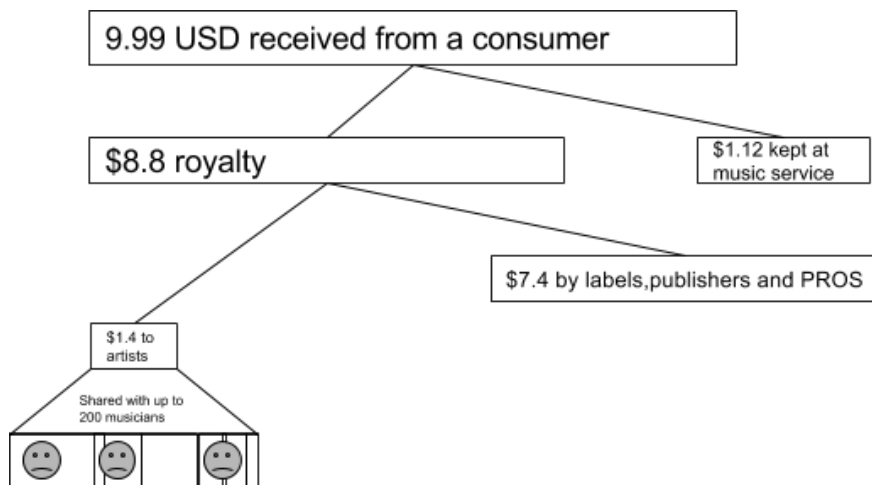


Figure 2. The current industry myth on distribution

One famous case is the complaint by singer James Blunt, “*I get paid £0.0004499368 per stream*”. For 1 million playbacks on Spotify, James Blunt only receives £450! It’s actually not the worst case, many artists can’t even bargain such a rate and are paid far less. For this reason, many musicians still can’t make a living, which forces them to be part time or just change careers. Given the ubiquitous technologies and social media today, it’s worth asking: *Do all of these organizations still add value?* Most musicians today are very busy marketing themselves, creating and recording music themselves, and sharing content online directly.

## New Paradigm

We need a new model that re-structures the entire process, from creation, to consumption, to compensation. The model we propose here is based on the theory of Sharism, which emphasizes a tight coupling between sharing and rewarding.

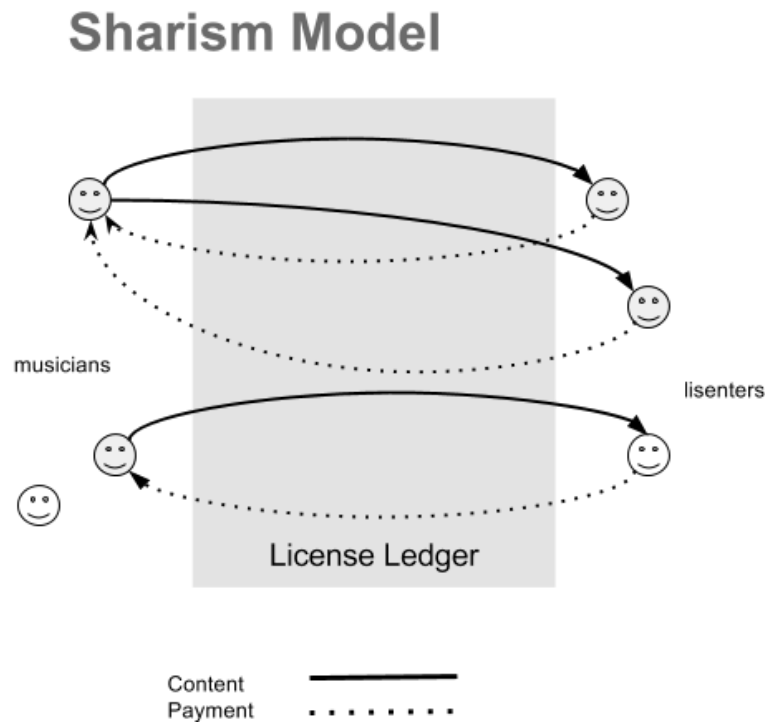


Figure 3. Sharism Model creates a closed circuit between musician and listener.

In Sharism Model, each playback represents an exchange between the musician and the listener. The listener sends a payment to the musician, and in exchange is granted access to a specific work. This model requires a payment mechanism that is fast, has a low transactions cost, and works across borders. Fortunately, with the rise of digital currencies and blockchain technology, such a system is already possible.

## Musicoin: A Digital Currency for Music

To support the Sharism Model, we've created a new digital currency specifically tied to music consumption called Musicoin. For every playback, a digital coin is sent directly from the listener's account to a "coded contract" that lives on the blockchain (called a "Pay per Play" license, or PPP license). This PPP license then distributes the payment to the beneficiaries within seconds. For example, a band may release a license that pays 50% to the song writer, 25% to the singer, and 25% to the guitarist. Critically, the way in which the funds are distributed are

controlled entirely by the musicians and no intermediary is required to facilitate the payment other than the blockchain.

The tools used to create, deploy, and maintain PPP licenses are provided by the platform and are simple to use. In fact, once a musician has a media file ready to upload, the whole process can be completed in about 5 minutes.



Illustration of the payment flow, in which a user sends payment along with a request to play a particular work and in return is granted access. Specifically, granting access means providing a key that can decrypt an encrypted audio file that is stored on a distributed file system.

## Making Musicoïn a Reality

We recognize that proposing such a system is quite simple, and that actually building, testing, and refining it is another matter. We also recognize that it is not uncommon for new blockchain projects to over-promise, collect ICO funding and allocate large sums to the creators, only to fail to produce any tangible results. Therefore, we have taken the following steps to earn trust:

1. Will have built a **fully functional implementation** of the proposed system, and are currently testing an alpha version. Invites are available upon request to musicians and users that are motivated to contribute their feedback or effort.
2. We **will not allocate any coins** at the genesis of the blockchain to anyone. This means there will not be a so called ICO (“Initial Coin Offering”) and no coins will be allocated as payment to the creators.
3. We will **make the entry barrier as low as possible** for musicians and listeners alike, to avoid the risk of becoming yet another echo chamber of blockchain enthusiasts interacting only with other

blockchain enthusiasts. We aim to be generally useful and accessible to the general population from day 1.

To those ends there will be a global music catalog, which enables musicians to create and publish their licenses and also funds playbacks out of its own account (as long as we can mine them fast enough), so that listeners can test the system without needing to acquire coins.

## Open Opportunities

Musicoin also offers a great opportunity for larger stakeholder groups. Big labels may have to adapt, but they can benefit from this platform because the whole market scale can be enlarged, they can work once and harvest forever and worldwide. They can put their copyrighted content onto Musicoin blockchain and keep enjoying the upscaled consumption.

With Musicoin, today's streaming music services don't need to process hectic paper works to prepare reports and pay musicians, instead, all the information are open to access by anyone in the world, instantly. Musicoin is designed for both musician and listeners, but will eventually benefit the whole industry—even traditional players.

Marketers, promoter, DJs, and social curators can also benefit from this system, which can spawn new values for listeners, thus generating returns to them.

Startups can build more innovative technologies and services upon Musicoin system to meet diversified demands from the network; Hardware makers can create tangible and wearable smart gadgets to extend the glory of musical devices in our cultural legacy. Imagine your home speaker can be much smarter someday, not only caching music when you are not at home, but also help you mine coins to pay musicians when you play, it's the most beautiful thing in the digitized world.

Big open data on Musicoin blockchain can also lead to more intelligent music recommendation. Based on Musicoin system, AI can play more and more important role to help users to discover music based on their taste, which is learned by the machine. It can be very personalized because every playback history will become the foundation of more accurate recommendation in the next. It's the gold mine to AI researchers.

## Conclusion

“Someone is making an enormous profit,” says Krukowski, a musician that shared his royalty check online, “and it’s not the musicians.” This is the complaint made by many musicians in the past. Today, with Musicoin, we can definitely change this. Musicians will make money and 100% income will go to their own wallet.

In an age of turbulence, we can also expect paradigm shifting. The changes rely on everyone to participate. We’d call all musicians and their appreciators to join this great transition to make music more meaningful to our life!

- Join our **slack**: visit <http://slack.musicoin.org> to testimony and engage this revolution.
- Follow twitter: <http://twitter.com/musicoins> to receive more updates on this movement.
- Visit web site: <http://musicoin.org> to see how musicians are empowered by this cutting-edge new technology



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