BSV CASE STUDY: ONLINE MUSIC MARKETPLACES

Examining the individual features unique to the Bitcoin-enabled internet offers a glimpse into how current internet businesses could improve, but when a business is conceived and built natively on this improved internet, entirely new experiences are possible. While it's true that the internet improved the distribution of newspapers by putting their contents online, internet-native businesses like Twitter have arguably had a bigger impact on illustrating what the internet is capable of achieving. What is an example of a Bitcoin-native business we might expect to emerge?

The music industry, from production through consumption, has been one such industry fundamentally transformed by the internet. We expect the Bitcoin-enabled internet to continue this trend. The development of the first online music store in the 1990s foreshadowed the potential of the internet as a tool for easily distributing and consuming music. Eventually, the downsides of digitizing music were realized as creators and owners of music experienced the difficulty of maintaining effective ownership when songs could be easily copied and illegally shared on platforms like Napster. In 2003, Apple alleviated some of this problem by releasing iTunes, the most successful online music marketplace to date, which aimed to make legally buying content so easy that it was not worth the effort or legal risk to pirate it.

Since then, legally accessing on-demand online music without first buying it was made possible through the rise of popular streaming platforms like Spotify. Spotify and its streaming competitors have proliferated a "third-way" for online music which gives artists an additional monetization method through inclusion in a massive online music catalogue which users can access through a freemium model. The freemium business model collects revenue from ad sales (generated through the "free" option) and monthly user subscriptions (the "premium" option) and distributes it to Spotify and owners of the music streamed. With Bitcoin, a fourth-way of music distribution can be enabled that will improve the experience for both artist and music consumers as well as simplify the business model of platforms like Spotify.

THE PROBLEMS WITH STREAMING

Although streaming services like Spotify have proven to be the preferred online music option today, the model is far from perfect. Each major participant in the model has problems that a Bitcoin-native alternative can remedy.

Artists

The ability for music streamers to listen to unlimited online music for free or relatively low monthly payments has presented some downsides for artists. **The average payout per stream** to an artist on Spotify is between 0.6 and 0.84 cents ($0.006 - $0.0084). This has inspired protest from high-profile artists like Taylor Swift, who temporarily stopped licensing her music to Spotify and **credited streaming with** "(shrinking) the number of paid album sales drastically" and leading to a loss in control for artists and labels, who she predicted "will someday decide what an album's price point is."

Listeners

Taylor Swift's rift with Spotify also identified a shortcoming for users. **A Business Insider article** contemporaneous to the Swift/Spotify feud articulated this problem as "In a word: permanence." Accessing inexpensive online music is great for listeners in the moment, but what about the future? For fans of Taylor Swift's music, its removal from their Spotify libraries highlighted their position as music renters rather than music owners. The convenience of renting access to music libraries like Spotify doesn't come with the guarantee of long term access. The article's author notes the fragility of a business like Spotify going under or how "at any moment, the whim of an artist, or a licensing negotiation gone sour, or a quirk of copyright law, could quietly erase vast swathes of treasured music collections." This lack of control over access to a music listener's favorite artists is amplified by the competitive nature of streaming platforms which compete for exclusive rights to certain artists and albums.

Spotify

As one of the most successful recent companies in music and technology, Spotify may seem like exclusively a benefactor of the streaming model. However, the additional complexities undertaken to achieve this success have required they deviate heavily from their core mission of connecting musicians with fans. In the process of delivering this music service, Spotify became a participant in the advertising industry and needed to innovate

and maintain new backend cloud infrastructure. In an interview about their backend design and transition to a Google Cloud infrastructure, **Ramon van Alteren, Director of Engineering at Spotify, was quoted saying** "If I'm really honest, what we really want to do at Spotify is be the best music service in the world, none of that work on data centres actually contributes directly to that."

If there was a way for Spotify to provide a better service without having to maintain this infrastructure, would they prefer it?

The Business Insider article about the streaming model's lack of permanence concluded by weighing the pros and cons of the existing options: ownership and streaming,

> *"Owning music has its own problems, of course. It's expensive, and takes up significant storage space. You can lose physical hard drives storing music libraries, too. In contrast, music streaming offers powerful convenience — tens of millions of songs in your pocket, anytime and anywhere...(however), custodianship of (my music library) is not a responsibility I'm willing to grant to Spotify, or Apple, or anyone else."*

A FOURTH-WAY FOR ONLINE MUSIC: NETWORK CENTRALITY, DATA OWNERSHIP, AND MICROPAYMENTS

The next iteration of online music through a uniquely Bitcoin-enabled service could provide a solution that improves on the shortcomings of streaming experienced by all three parties. Imagine an online music alternative where content could be owned, maintained, and sold by artists and record labels through platforms with the identical functionality of Spotify where users could pay directly for access to virtually any song without needing to listen to ads, become locked into recurring subscriptions, or fear ever losing access to the music.

Because Bitcoin enables data ownership on the world's single public database, artists and labels would be able to include their music in a collection larger than Spotify's without negotiating a contract directly with any single company. Once uploaded to the Bitcoin-enabled internet, the song would be accessible by any party under the terms set by its owner, realizing Swift's vision of the ability to set her music's price point. Once

uploaded, online piracy would be disincentivized because of the native timestamping of the files. Illegitimate copies of the original would be provably inauthentic since they postdate the original and would be linked to the uploading music pirate through a digital paper trail, all of which could be used by motivated record labels as evidence in court.

Platforms like Spotify would add value through services they currently excel at, like indexing and curating music, to deliver it from the artist to the listener. Rather than focusing resources on licensing music, maintaining backend infrastructure, and selling advertisements, Spotify could refocus all of its resources on providing the best music specific features and charging micropayments of a fraction of a penny per microservice. Users who are interested in inexpensive on-demand music could then pay per stream. **Estimates of Spotify user activity** suggest the average user listens to 25 hours of content per month. If we assume this streaming is entirely composed of songs that average three minutes per song, this suggests that users listen to around 500 songs per month. At that rate of consumption, the average user could afford to pay artists more than double their current average rate, at almost 2 cents per stream ($0.01998), without paying more than Spotify premium's $9.99/month subscription fee.

This would have a few major impacts. First, it would enable light users of Spotify to forgo the free version's interruptions of ads without locking into a monthly fee and overpaying for their consumption. It would also incentivize artists to create more content as they are directly rewarded by its consumption. Without knowing the ultimate market price of a stream in this type of environment, it's also possible that the per stream price would be such that particularly heavy current users of Spotify premium would be able to listen to their current quantity of music while still paying less than their monthly fee. In this paradigm, concerns expressed by "music renters" over their libraries' permanence would be all but eliminated as the elimination of an artist's music from the internet, while possible, would be highly disincentivized. Once uploaded, an artist's content requires no additional payment or negotiation to remain accessible and its purchase through pay-per-stream services would be all upside for the artist. Access to music through Bitcoin would marry the data permanence benefits of music storage desired by listeners preferring ownership with the convenience of centralizing the world's music collection into a single and easily searchable repository.

Additional benefits for artists and record labels would include the cost reduction and removal of time delays that result from existing digital rights management and payment options. Artists who might currently be compensated by checks or direct deposits

for their share of the content's revenue on a per month basis would be able to get paid instantly as music is streamed. Further, despite the low price point per stream, a payment as low as 2 cents could be automatically divided up and sent to each individual party who owns a right. Taylor Swift imagined a future where artists and record labels could simply control the price of their music. For artists like Swift, features like real time fractional payment would likely increase the appeal of such a system.

Another possible arrangement on Bitcoin would be an affiliate model of music distribution. Once Spotify no longer needs to provide the service of maintaining the complicated backend infrastructure of their platform, they are effectively music sellers who connect musicians with their fans. It's likely that artists would be interested in paying Spotify and others to provide this service. Artists like Swift could pay Spotify on a per stream basis for increasing the reach of their music. If Spotify remains particularly good at curating bespoke playlists for its users, artists would be incentivized to seek inclusion on those playlists. Because the data would be easily accessible on Bitcoin to any entrepreneur interested in competing with Spotify, the barriers to entry to getting into that industry would be dramatically reduced. By opening this arrangement up to other music curators providing this service, artists could reach more music listeners through a variety of competing recommendation platforms and user interfaces. **BlareSV** is a Bitcoin-native Spotify competitor building on BSV today.