Building a Globally Distributed Recording Studio

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ABSTRACT

The internet has played a significant role in changing consumer behavior with regard to the distribution and consumption of music. Record labels, recording studios, and musicians have felt the financial squeeze as physical media delivery has depreciated. However, the internet also enables these studios, musicians, and record labels to reorient their business model to take advantage of new content creation and distribution. By developing a hardware appliance that combines high-resolution audio recording and broadcasting with real-time, two-way video communication across the web, we can expand the geographic area that studios can serve, increase revenue for musicians, and change the value proposition traditional record labels have to offer.

1 Introduction

According to the Recording Industry Association of America (RIAA), physical media sales have continued their double-digit decline from 2015 to 2016.[1] Digital permanent downloads have also declined in double digits with a combined total unit loss of more than 20%. The good news is that total value is up with paid subscriptions representing more than a 110% increase in total dollar sales. According to Pollstar, the Top 100 Tours combined gross revenue was up 3.1% at a record $1.48B.[2] We are seeing fans continue to support artists and consume music, but we're watching a shift in where that music is consumed and how it is accessed.

As services like Spotify work to help fans discover new artists and content from artists who don't make it into the Top 100 Tours, we have to wonder if the workflow of a typical artist continues to make sense.

2 Recording Acquisition

The traditional workflow for an artist would be to write new music, go to a studio to record that music, book concerts to promote and perform that music, and finally sell the recordings made in the studio.

However, if streaming of music is really the new methodology for fans to consume content, do we expect artists to transition the traditional model to focusing exclusively on getting their content onto streaming services and spending their time marketing themselves to fans? The role of the record label alleviates some of the stress of marketing, but with the clear majority of artists *not* on a record label, we must ask ourselves if this is really the best process.

In the name of efficiency, what if we could remove the cost and time barrier of a traditional recording? Would we see an increase in the number of songs artists write? Would we see a rise in the number of gigs an artist could book? Would we see an increase in the average revenue per artist as they spent less money on recording and more time performing?

3 Remote Recording

If an artist were to substitute regular studio recordings for regular live remote recordings, they would encounter several benefits and drawbacks. First, a live recording captures more than just music, it captures a moment. It allows the listener to remember or imagine an experience that took place

in real life, at a real moment in time. This non-tangible value creates real value in the mind of the listener. Secondly, decreasing the amount of time it takes to record in a studio increases the amount of time an artist can spend performing, writing, and introducing their music to new fans. Increasing the number of fans an artist has is directly proportional to the amount of money an artist will be able to make either through ticket sales, recording sales, number of times a song is streamed through a streaming service, or through merchandise sales.

The difficulty with remote recording is two-fold. First, hiring a studio to set up a remote recording session is expensive - more expensive than a traditional studio recording. Secondly, getting a quality recording of a live event is more challenging than a typical studio recording. If an artist tries to spend less money on the recording by doing a mixdown at the performance, setting up a two-track recorder in the back of the room, saving the stereo board mix, or asking the front of house (FOH) engineer to cover both the live mix and the recording mix, the quality of the recording will suffer.

4 The Appliance

We believe the solution to the cost and quality problems that a typical artist faces when attempting to obtain a live recording can be solved by deploying an appliance that simulates a recording studio. This appliance would sit between the live event and the recording studio and would meet the following criteria:

- Facilitate two-way video and audio communication between the studio and the artist at the venue,
- Collect full resolution multi-track audio from the performance, either on stage or at FOH,
- Provide a method for the remote engineer to monitor the event audio, input gain, output gain, and acoustic quality of the audio entering the appliance,
- Provide a direct method for the engineer to manipulate the audio as it enters the

appliance including adjusting input gain and limiting the signal to avoid clipping,
- Provide a way to transfer, backup, and record the audio entering the appliance in such a way that allows for instant retrieval and preserves the individual audio stems in full resolution,
- Include analog and digital inputs, outputs, and pass-through routing, preventing the appliance from interfering with the local engineer's workflow at a venue,
- Include a failsafe to preserve the recording in the event of a loss of communication with the recording studio.

In addition to the above criteria, the appliance should be attached to a content delivery mechanism that would allow artists to distribute their content to their fans and to streaming services after the recording has been made.

5 Our Solution

In an attempt to build this appliance, we constructed a unit that would allow a studio to retrieve the same audio stems that would be gathered if recording engineers were attending the performance. In addition, the unit would also provide the isolation required if they were attempting to do a mixdown at the venue while the performance was taking place. While our solution was ruggedized for traveling with a musician, the same solution could be installed in a venue to be offered to each artist booked at the venue, provided to a tour through a rental company, or offered as a service by a record label.

Figure 1. Front of RecordME Hardware.

Our first solution is an appliance that is vertically compact at two rack spaces. It includes eight analog inputs and outputs (I/O), functioning like a direct box when placed on stage. It also includes digital I/O in multiple formats including MADI, Firewire, AES50, USB3.0, Dante, and ADAT Optical. For two-way communication, a 4" screen, camera, and speaker is installed on the front of the unit so the performing artist can see the engineer and have a normal conversation with her.

Figure 2. Rear of RecordME Hardware.

Our second solution is a larger appliance at six rack spaces tall and is housed in a shock-mount road case. It includes 16 channels of analog I/O and 32 channels of bi-directional digital audio and utilizes a 7" screen along with a similar camera and speaker. All inputs and the video/audio engineer interface are located on the front of the appliance for more convenient patching and communication.
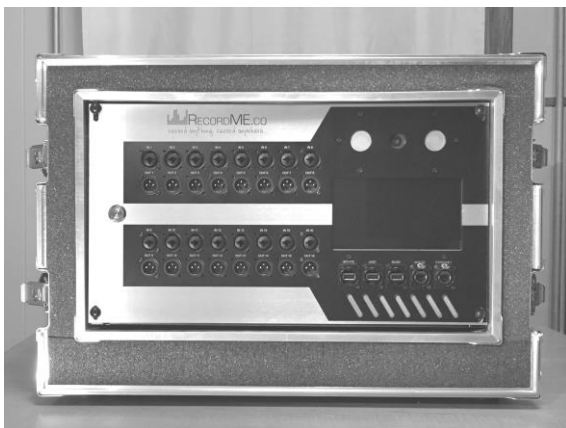

Figure 3. Front of RecordME Pro16 Hardware.

6 The Future of Recording

What are the implications of an appliance that allows artists with small to medium-sized followings to obtain a studio recording of a live event without the costs associated with hiring a studio to record it? From the artists' perspective, they will see an increase in the number of recordings they can offer for sale or have streamed which should corollate with increased income potential. Additional time and money not spent on a studio recording can be reallocated to booking and performing more shows or expanding a songwriting catalog. The ability of an artist to monetize more affordable recordings may lessen the reliance on a record label for music discovery and promotion. Shifting from a reliance on studio recordings to live recordings may increase fan engagement and foster deeper connections with artists, leading to increased attendance at shows for a shared experience. We may see a trend where music discovery and participation becomes more localized, with national acts becoming less prominent and regional artists providing the most compelling story for young musicians to replicate.

When engineers set out to build recording studios, they are faced with the early decision of where to locate their studios. They can migrate to an urban setting but will be faced with increased costs for construction and sound isolation and greater competition from other studios. But the payoff is a larger pool of potential clients willing to pay a higher rate per hour. On the other hand, engineers can choose to locate their new studios in a more rural setting. Costs related to sound isolation and construction will likely be lower and they will have less competition, but they will have a more difficult time locating business and won't be able to charge as much money per hour. However, if engineers were able to tap into a network of connected recording appliances distributed globally by a networked appliance hosting service, they could access a depository of pre-recorded events ready for mixing, mastering, and delivery. The increased costs of locating a studio in an urban environment could be avoided.

The system is similar to the way the Uber cab company works. Available drivers log into a service

when they're ready to work and each pre-vetted driver is able to claim a ride call. In a globally distributed recording studio, pre-approved engineers would be able to claim an available recording job, working hours that suite them, and delivering the finished recording before starting the next job. In Uber's case, we saw a disruption of the cab industry when they started operating in cities that relied on traditional cab companies while, at the same time, consumers saw a lowering of the cost of their average fare. Would a globally distributed recording studio have a similar effect on the cost of mixing recordings? Would it create more work for everyone?

Fan behavior may also change if the recording industry shifts to producing more live recordings than studio recordings. When a significant portion of music consumed by fans is live, will it increase demand for live events? If artists respond to a demand for more live events, will it increase their revenues? Or will it become too difficult for artists to tour nationally and fulfil the increase in demand for live events? Will local artists rise up to meet the greater demand? Will an increase in live events increase the amount of engagement between the artist and the fan when the artist is more locally focused and less nationally focused? Will this change the marketing strategy of major record labels?

Streaming services or record labels could attempt to prevent such a shift in fan behavior by proactively moving to build smaller networks of premium connected studios and artists with a pay-per-month service. A streaming service could partner with a label and make every performance on a particular tour available only to subscribers of the service. It could also offer exclusive content only to subscribers or to fans who attended the live event. Would we see an expansion of studios built by larger labels to prevent content from being shared outside the label's network similar to what we currently see from the most popular video streaming services? Will consumers need to choose to subscribe to the top three or four major record labels in order to be able to consume new content?

Building larger, connected networks can also have an effect on the two-way exchange of value inside of communities. When we look at the growth of the blockchain that underpins exchanges like Bitcoin, we see the enormous value that can be added to a community through trade and exchange. Do we see a potential future where individual artists could develop an initial coin offering (ICO) with branded 'coins' that allow for an exchange of value? Could a network that collects live event recordings create an 'Artist Coin' and after an initial ICO, see fans purchase artist coins to buy tickets, download music, purchase merchandise, and increase the value of the artist based on fan interaction instead of record label promotion? What if a band like the Grateful Dead had a blockchain that connected every fan to every recording of every event that was made? What would the community look like? Would 'Dead Coin' have grown in value enough that early fans would have seen financial success as the band saw success?

7 Conclusions

We are at the early stages of building a globally distributed recording studio. We don't completely understand the impact and ramifications of a new system where live events, studios, and fans are connected across the world and how a distributed studio will intersect with existing and future technologies. We can be sure, however, that the future of recording and live events will certainly be different than what we currently see in 2017.

References

[1]   *News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics*, Recording Industry Association of America (2016).

[2]   *2016 Mid Year Business Analysis,* Pollstar (2016).