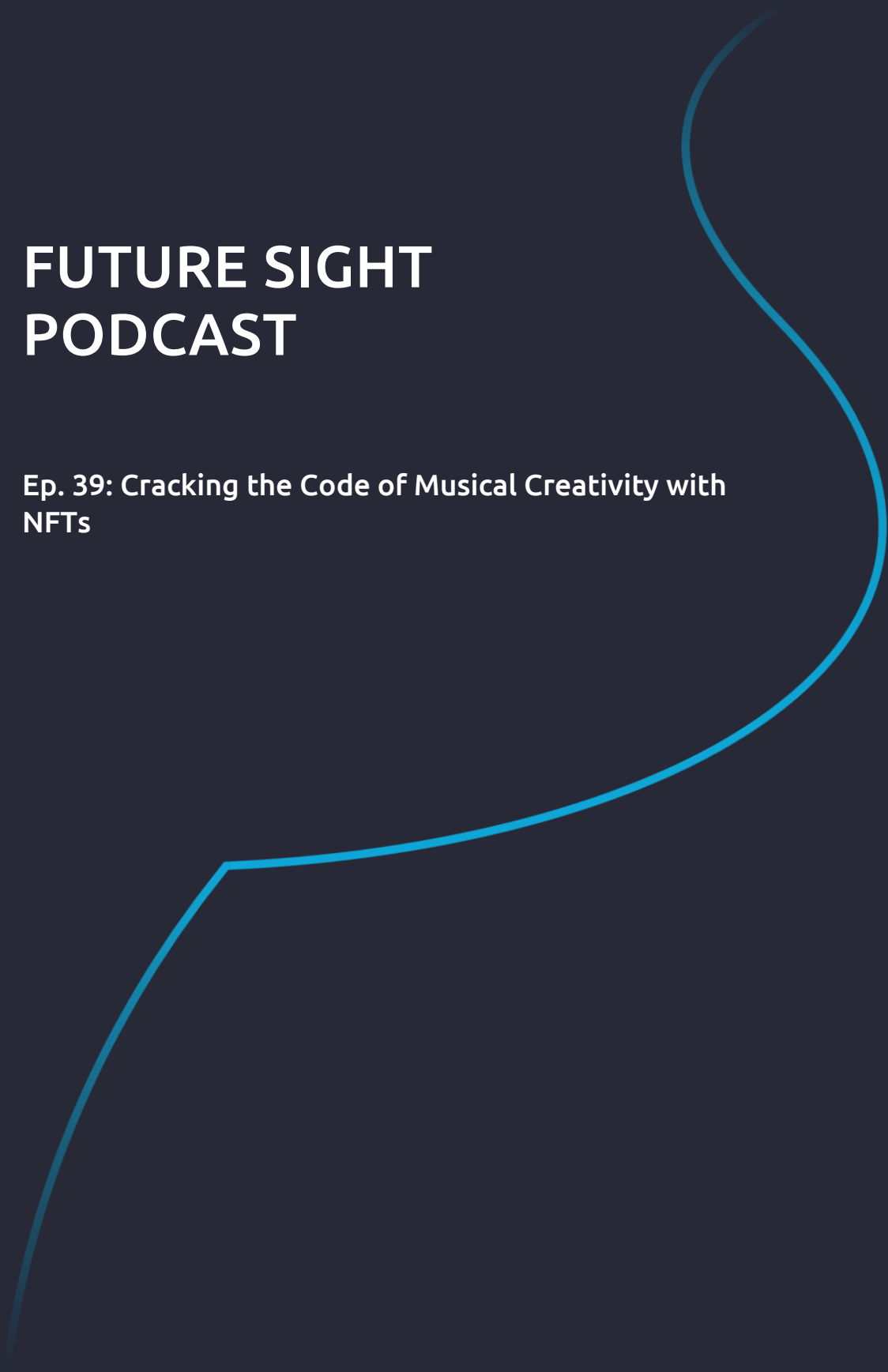


FUTURE SIGHT PODCAST

Ep. 39: Cracking the Code of Musical Creativity with
NFTs





Future Sight Podcast by Capgemini Invent

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Episode Transcript

Kary Bheemaiah: Hello, hello! This is Future Sight, a show from Capgemini Invent, where we explore emerging technology trends and new ways for you to adapt and grow your business.

I'm [Kary Bheemiah](#), the Chief Technology and Innovation Officer of Capgemini Invent and the co-host of Future Sight. Joining me in today's episode as a co-host is [Dheeren Velu](#) from Capgemini.

Dheeren has had a long career in Artificial Intelligence. He worked on the [IBM Watson project](#) back in the day. And he's currently the NFT¹ stream lead in Capgemini's Metaverse Lab. In this week's episode, we are speaking to [Finbar O'Hanlon](#). Finbar, in my opinion, is a true definition of a Renaissance man and a man about town.

He's a guitarist, a music composer and producer who's played with some of the biggest bands in the world and contributed to the soundtracks of some of your favorite movies. He's also a technologist and the inventor of [Linus Video Systems](#), the company that provides a patented video content delivery technology that solves the fundamental challenges in the workflow and monetization of music and video content delivery over the internet.

Apart from running these businesses and artistic collaborations, he's also prolific speaker. If you haven't watched it already, I do recommend you watch his TEDx, "[The Complexity of Simplicity](#)". And apart from doing all of this, he's now entering the NFT music space as well.

So guys, with that introduction, welcome to Future Sight!

Finbar O'Hanlon: Thank you so much guys. It's really amazing to be here in great hallowed company!

Kary: Music NFTs. That's the reason we are having this podcast. And Dheeren and I have been talking about it for a while because we kind of feel that where music NFTs are today in the same place that art NFTs were around two years back. And today, what we really want to be able to do is break down both of those things.

Firstly, music. How it's been created? How it's changing the business model behind it, the incentive structures...? And then go to the NFT side of things and see how it kind of addresses these changes as well.

Finbar: Sounds good!

Kary: So with that introduction, Finbar we always like to start these kind of episodes by figuring out who is this person we are speaking to.

How did you become this person that you are today? You're prolific, you've played with some of the biggest bands, you've partied with movie stars. So how did this journey begin?

Finbar: Well, it's really interesting because you know what? One of the first questions, when people meet you, they ask is like, what do you do?

You know, I used to find it very, very hard to explain what I do because I do so many different things. I really just learn, but I tell people I've worked hard my whole life to be indescribable. And that to me is something that is quite... It's fun on one side, but actually it means a lot.

So where did that start? I'm not really sure. I just know that, you know, when I was a kid, when I was growing up, I was labeled as ADHD or hyperactive or whatever you call it. I was just had a thirst and a hunger for trying to solve puzzles.

And, you know, I was one of these kids. I wasn't into sport. I didn't really fit in. I was one of these weird kids. I'm sure there's probably a lot of the weird kids listening to this that can relate to that. But, you know, I was one of those kids. I like to compete against myself and when I found music, I was probably, I think, 10 when I first got my first guitar.

And I remember my dad said, "right, son, you've got to play this till your fingers bleed." And I went, "okay, dad" and I went upstairs, and I played, and I came down, showed him my fingers bleeding. And he's like, "no, no, no,

¹ "A unique digital certificate, registered in a blockchain, that is used to record ownership of an asset such as an artwork or a collectible." (Collins)



no. It was a figure of speech.” And I was like, “what does that mean?” You know, but a lot of people say, well, how did you learn to code when you're a musician?

And there's a lot of similarities. It's just people don't think that because they don't, you know, it's so far apart for them because they don't understand that world. But the actual pathway between the two, when you do both is very similar.

Kary: No, it does. Because this was actually interesting because, I was reading a research report, which was done by Stanford or one of these big schools.

I'm not sure which it was. But they actually did a survey of a number of people who are pure technologists, like very technical people. And the stereotype is people like this are very analytical and they're not very creative, but they found that a large percentage, well over 50% of these people, during their free time actually played instruments.

So I think where people might get confused is the transferability of skill sets because on one side, you know, you're reading musical code. But how does that actually allow you to, let's say, you know, recode in Java or C++ or Solidity or whatever it is.

Finbar: Well, it's fascinating to me because, you know, I say to people, if we look at music as a code, it's a codified language.

Okay. And it's a universal language. It works across anywhere across the world with different languages, but it's more than a standard language where there's notes, which represent, you know, a physical structure of a frequency of sound.

When you're reading music, it's like hieroglyphics in a lot of ways. There's a lot of symbols that relate to the dynamics of how hard you play something, how much you pull back, the timing of something, how much you accelerate the timing of something. And so there's all these other pieces of code in the code that help navigate or help give you the expression.

And if you played music and it was all the same velocity, if the drums were always at the same velocity, they would have no feel in it. And so there's all this codified language around, how do you create feel in something? And so when you go in what it does as a musician, when you learn the language of music and you start playing with someone, you start to develop observation skills. You develop active listening skills.

And for me, I've been a very visual person. So even when I would construct, you know, big pieces of enterprise software, I would always start with the wire frames and the visual interfaces. And then I would assign teams to the workflows of those interfaces and get the teams, the technical developers to follow that customer journey.

So they would actually develop based on a customer's experience. When I released my last album last year, it was called “[The Code](#).” And what I tried to do was to try and do a science experiment and a music album, which also had a video track.

So instead of a soundtrack, it had a film track which supported the music rather than the music's about the film. But what I tried to do is in each song, I used hidden codes and the hidden codes are there to represent the things that are underlying in our life that connect us emotionally, spiritually, scientifically.

So one song, I actually wrote the words to the song and transcribe the words to Morse code. And then I played the Morse code on the rhythm guitar. So in the song, no one would ever hear it because it's all instrumental. But then I wrote a booklet which explains some of the hidden codes in each song. I had gravitational planetary data of azimuth. And then I had other things where I had DNA imprints of animals, and I've sort of infused all that in it.

And for me, it's like music has become this background playlist to our life where it's become a commodity. And what I try, what I was trying to do with my music is to try and say: If I can create a story book and explore some of these hidden codes, I might just get some people going back to active listening, going deep into the music rather than just this background thing while you're doing the dishes.

Kary: No, I love the musical easter egg, but now I want to ask this to Dheeren, because you are the AI guy over here. You won a bunch of awards for it. And you'd worked with, you know, on the IBM Watson project. So when you worked on IBM Watson or, you know, not just that work, anything, which AI, have you seen the same kind of transferability?



Like how was creativity important for you to be able to do what Watson was trying to do?

Dheeren Vélú: Yeah, no, I think I was resonating a lot with many of what Finbar was talking about. Code itself is a creative process. Writing a program is a creative process. So I pretty much started my career as a graphic designer.

This was just during university time and I was doing freelance graphic work. And at that time, what I used to do is I used to create... Finbar you might appreciate this and relate to this. I used to do fractal art. So digital art, which was basically some form of a fractal that it sort of really boiled down to a mathematical formula at the end of the day.

So a code in essence. But then a code rendered beautifully visually into art. So I used to print them. I used to print them and go and put them in art museums and sell them. And I would print out the formula, the back of it. So this was the... Today you would call that an NFT. You would call that a non-fungible token in many ways.

So I was always inclined to its creativity, and I did a lot of these digital creative stuff. Later, you know, during my artificial intelligence journey, we've done a lot of generative art, even recently. Kary, you were involved in some of this work, at Capgemini as well.

We started to use AI or some kind of machine learning algorithms to produce art based on patterns, based on certain set of patterns. But then the fact that these algorithms or these programs, they can just span across, you know, wider than the realm of how we think art.

So, most of the times it surprises us on what the computer thinks is art. So, yeah, it's very interesting.

Kary: Yeah, it's always like one of those challenges that I come across when I try to make a definition for inventing an innovation. And the one that I've kind of settled down on is invention is when you use existing things, whatever it is, it could be a piece of code, it could be a tool. It could be an idea.

But you mix them in different ways so that you create something that's totally new. And then if you go from invention to innovation, well, that simpler definition and innovation is essentially making an invention successful.

Finbar: Yes, I have a similar thing. I talk about imagination is unbound thinking.

Creativity is the reorganization of existing things to create solutions to problems. Invention is when you turn that process into something created when it's actually made, that's the invention. And then innovation is when it's valued, it's measured by someone else. And it's fascinating because what you are talking about Dhereen, in terms of that creative process, it's sort of... It triggered, like I started this journey with a famous photographer called [Mick Rock](#) in New York. Mick did all the Bowie stuff. Blondie, Lou Reed's Transformer. He was very famous photographer. He's got a show on, a document he's passed now, but he had a documentary on Netflix called Shot. If anyone wants to see it.

So I used to hang out with him in New York when we would, we would do some projects together and we did this project for David Bowie actually, which was way back in the day. So when you were talking to re it really triggered it to me, because I actually sort of forgot about it. But what I was doing back then was I was taking the sound fingerprints. Putting it into a... It was basically luminance and color generator plug in for after effects. And then the sound would then trigger a luminance overlay.

And then what we would do is then overlay that on one photograph. So at 44,100 samples per second, which was at the time CD quality, we got 5 million 292,000 individual unique photographs of one photograph based on this section of the song within that second. So it meant Mick Rock could do original artwork and only do it once.

And so when you think about that, that was 2011. So when we think about that, that really is an NFT, right? It's an original one piece of art. And as you were talking, I'm like, Man. I remember that thing I did way back then it was, and everyone thought we were completely insane. Like what? You're taking a section of a song and injecting it into a graphical overlay.

But yeah, it's, it's you just triggered that memory. It's blown my mind. I just, you know, all these weird things I've done through my life, and everyone's thought I'm completely insane. It's like, yeah, I remember that. It was cool!

Kary: Now that's always the way it happens, right. But I think there's a real question of perception change.

So, what is active listening? Why should we relegate ourselves to only using one of our senses? When can we have an audio visual experience?



Finbar: Look, I work with a lot of artists, big and small. And you know, a lot of artists ask me to mentor them and I'm doing all sorts of things. And I just, I think, what a lot of artists forget in a lot of senses when they're trying to make their craft a commercial craft, where it drives revenue for them is they really have to think through the lens of the listener.

And they really have to think about what, what am I do? What's the value of the art that I'm creating through an external lens? If I'm doing it for a commercial return, not if I'm just doing it for myself. And so, you know, the audio visual component provides a much more I'll call it up to date, but it's just a more engaging experience than audio alone in most cases, purely because people speakers now are Bluetooth speakers. They don't have their high resolution. They haven't got \$20,000 speaker sitting at home. They just... Their Bluetooth speaker's fine for them. And so what we have to do is think about the environment that most listeners are listening on.

And so, and what do they have access to? And so it's about using as much of that capability to get your message across and your art and connect with the listener. So when we get to this peer point of your question, Kary, which is active listening to me... Active listening is the process of connecting with a listener where you take the listener through an entrainment process, where they get sucked into your world through the art that you are creating. And especially whether it's an audio art. And so it's not an algorithm you create to create active listening, active listening is the engagement where you're taking someone deep.

Kary: So is this the objective of what you're trying to do right now with, Ahmet Zappa and the new project that you started, which is called Rezonyx.

Finbar: Rezonyx is a technology I've been working on for about six years.

Creativity always starts with a question, alright? And so one of my questions was why are we using 12 tone temperament tuning? Why is the mathematics of everyone playing in tune? How come those frequencies don't resonate with the human physiology? When in harmonic tuning, ancient tuning, tub, sitars, flutes, they were tuned in a way where it resonated and I go, oh, that sounds good.

And that was it. It wasn't about this needs to be a perfect fifth. And it started on this journey about going the question was: what if I could change the frequencies of a mixed piece of recorded music back to harmonic tuning? And that's never been done, right. Because since their first LP was created, there was a tuning methodology in place where the guitars had frets on them. The bases had frets on them. The keyboards were tuned to a certain way. All the instruments were played in tune. And so it required a post processing, a mastering process, which did the re harmonization of those individual notes in a scale. So, it was an experiment really about what would it be like if I could actually change a mix where I could retune each note over four octaves in a musical scale, what would happen?

And so the first couple of trials on that was people were saying, wow, that sounds like it's in surround sound. But I didn't do anything other than I didn't make any surround sound. It was out of two speakers. So then I started saying, well, what now, if I could actually start to use some of these scientific principles binaural beats, head related transfer frequencies, you know, other psychoacoustic principles that have been used for the decades, if I could apply them on top of a piece of recorded work, which has been retuned to be more in tune with the human physiology, would that actually have a greater response?

Can we drive human performance through these psychoacoustic cues? And does it make it better if I put it, if I put these cues on a mix, that's been retuned to this human physiology? Now, after all these years, you know, and many trials and a lot of neuroscience and, you know, fail things and successful things where we're moving into trying to move this into this process where, because it's forward thinking technology, we wanted to sort of try this in the NFT space and that's what we're actually coming out with.

Kary: No, but before we get to the NFT space, I actually found something really funny that you, while you were explaining what you're doing. Binaural beats² specifically, all right, now, people don't know this about Dheeren, but Dheeren is like this extreme wine connoisseur.

And he's actually using binaural beats in the opposite way. He's looking at it from a passive listening perspective, but to boost productivity. Now let's speak clear here. He's boosting productivity. So that by six o'clock in the

² "Binaural beats are a perception of sound created by your brain. If you listen to two tones, each at a different frequency and each in a different ear, your brain creates an additional tone you can hear. This third tone is called a binaural beat. You hear it at the frequency difference between the two tones." (Sleep Foundation)



evening, he can pop up on the bottle of wine. So I find it interesting that we are using the same medium, but you're talking about it from an active listening perspective and Dheeren, now I'm switching towards you.

You've been using it, not just so you've been forcing your teams to use it as a productivity tool, listening to it passively. So what's been your experience with this because listening to two beats in, in different frequencies, I just find that might confuse me. But how what's your experience with it? And what's been the impact of it?

Dheeren: Yeah. I'm not forcing my team to use them!

Kary: So he says, so he says...

Dheeren: I inspire them with things that I pick up from all of my research. I think I came across this, must have been Huberman or, or someone that once mentioned about binaural beats in a podcast.

And I started, listening to them. It works for me. Finbar, you know, what I understand is at a very, sort of a high level, it plays different frequencies in your different ears. So you obviously need headphones of some sort, and it basically puts your brain into a state where it's trying to grapple these two different things being played to it.

So it brings in focus. Or can put me to sleep depending on the frequency that I've chosen. So, you know, it could put me in a certain state, a flow state or a Delta state or an Alpha state or whatever it is. It just worked perfectly fine. So, you know, every now and then with my team, we talk about all the little hacks.

We pick up, you know, each one of us and I brought this to my team, and I said, oh, you might want to listen to this before going into a meeting before you go into a presentation, I think it works. They've had some positive reviews about it.

Kary: Okay. But what I'm getting from all of this is essentially there's multi-faced users of music.

On one side, you can use it just for the pure entertainment part. On the other side, you can do active listening and it just has a much more surreal, uplifting experience. And on the other side, you can just have it working on the background, but it's allowing you to kind of do something better. fin.

Finbar, this kind of sounds that these changes have happened, or at least they've been highlighted because of the role of technology in the music industry itself. And the way that music is consumed and produced. But at the same time, what do you think is the biggest mistakes that the industry has made and is still making when it comes to using technology? And have they learned anything from it?

Finbar: Well, look what people see from as a fan of music behind that is a really big machine and it's a very complex structure of rights, products, services. There's a whole bunch of stuff. And typically. The artist is often not across the understanding of all of this complexity. And in a lot of ways, the industry, in my opinion, and working in Los Angeles and in the back end and the front end of these industries, it seems to me that it's been made overly complex on purpose, because it's very hard to get transparency on a lot of things. When you have different rights deals and different publishing things sitting over here and X, Y, and Z.

And, you know, it was it's interesting when I sat with a Google guys and I was, I was working with Dave Stewart from the arrhythmic, and we were working on a project many years ago called "[First Artist Bank](#)." And it was well before blockchain³, but it was, it was, in essence, like a blockchain type thing for artists. And we were working with Visa and a few other big providers. But when the recorded works of artist, let's say the Van Halen brothers or the Van Halen band, when Warner brothers own the recorded works, the band doesn't own that recorded work. The actual label does. And they have a deal with the artist, but the recorded work is typically owned by the label. The label then commercializes that work.

And so then when they do a grand rights deal with say, Google, there's no ability for an artist to say, well, even though you have those recorded works and you can play it on YouTube, I'm still now not allowing the mechanical component of my royalty. I'm going to stand in the way of that transaction being play. Even though my rights are there.

And, and it was really interesting because I was saying, why isn't that the case? Why doesn't the big platforms have to do an individual deal with a publisher rather than saying that's all we're paying. And just like a Spotify,

³ "A distributed digital ledger that stores data of any kind. A blockchain can record information about cryptocurrency transactions, NFT ownership or DeFi smart contracts. While any conventional database can store this sort of information, blockchain is unique in that it's totally decentralized." (Forbes Advisor)



we're the ones dictating the terms. And obviously it's a lot easier to do that, and it's a lot easier to build the commercial models. But anyway, the back end of this is a very complex ecosystem. And so even through the best efforts of some very senior technology people, some bankers, a company like Visa, which is multi-trillion dollar network. It was still very, very hard to even come up with a solution for it.

And, and so when we talk. What are the mistakes that are being made? I think that there's... One of the greatest mistakes is that everyone's come at music from artists to labels, to everyone, with an abundance mindset, not a scarcity mindset.

I think that's probably the biggest issue. And so because of that, there's 50,000 songs being added to Spotify every single day that's being allowed. There's, you know, it's such a crowded space that music has become so commoditized that the value, because it's so abundant, the value has become so low that people don't even think music has any value anymore.

And that's because of a number of different things, and that's okay. I'm not criticizing that. I'm just saying that I think that, that there hasn't been enough focus on scarcity of like, how might I only do 10 of these? How might I only connect with this particular version for a hundred of my super fans and have it at this price?

But I think what's great with the advancements of technology and what's starting to happen is that people are starting to realize that scarcity drives value. Not abundance. So having access to everything, you know, I have a saying "everything is not important." And it, that doesn't mean that all the new artists don't have a place in this world. They have a place just as much as any others. But it needs to start from what is the value as an artist that I'm creating for my audience. As an audience, who are the people I can find out that really are interested in driving value for me as a listener, and then in the middle who are in the business of really trying to help that connection between the person looking for that artist and the person that's trying to really create through the lens of their audience.

Who's the one that's really adding value, real value into the middle of that equation? Rather than just a big behemoth business, which is just pump it out, pump it out, pump it out, pump it out. Because what happens is the more you pump it out, the more it gets devalued.

Kary: No, but let's kind of like break down this complexity a little bit.

And while I can't get into all the nuances of it, I think it kind of broadly falls into three categories. On one side, you have a creation, then you've got the curation and lastly, you've got the distribution, right? So this is kind of like where the main pockets of complexity lie in the music industry today.

So, how do you think that music NFTs are actually going to be able to solve? If not all, at least some of these issues. And before you answer that, what is a music NFT?

Finbar: Also the way I look at a music NFT, it's an audio file. That's been assigned to the... It has a record on the blockchain.

So it has a level of Providence, which says that this is my scarcity value, or this is my record that beside this digital file that can play anywhere in the world on anything. That's a copy of the file. This is the real file. So it gives just like the baseball cap that's got the sticker on it that says I am the real copy.

First off, it's purely a token that provides Providence that says, I know where I've come from and this is a real version of something provided by the content creator. So, that's the way I look at it. Now that's from a technical aspect, but from an art aspect, a music NFT is a product that is created by an artist that allows a multiple different ways to provide value to a fan or a super fan because of the advent of technology.

That means that you can do different things with it. So you could have 10 songs of this version, which has got a slightly different mix for 10 fans or in a hundred fans, or you might do a specific version with something in it. It allows the artist to think, you know, on a greater detail rather than here's one song and I'm going to push that out.

They can start to think about, "hey, I might just do this a little bit and then release this in a, a specific way." So the music NFT from the art creation perspective means you can do a lot more with the art than just here's a song from the distribution perspective. It means that you can actually build financial models whereby someone in a cafe in London can have a license to play that song 10 times and then can buy another license for 10 times, or they can buy it once.



So that allows all whole heap, new commercial models. It allows for new ways and new methods. If you are releasing stems, to allow DJs like Tiestö to be pulling in live different drum fills and keyboard things and put together live mixes where all those recorded parts of the stems have attribution back to their original owners.

So it starts to think about how might we use components of art to synthesize and mix it together, but still the artist can be paid back. And obviously, as you would know, you know, DJ's for a long time would be putting together this stuff and the rights and royalties were a mess and sample length times.

And whether that's a mechanical or there's, it was all so complicated, but it opens the world now to where that stuff, new business models could be made on it.

Kary: So, Dheeren, I want to kind of target some questions to you as well, because you know, on one side we are hearing about what the music NFT is and what it can actually do.

But then when we look at our own work with NFTs and we've been observing the space for a couple of years now, NFTs by themselves are changing, right? Today, you've got dynamic NFTs, nested NFTs are now soul bound tokens. So what are the, some of the technical challenges that entail being able to make a music NFT, and what's the best kind of NFT abstraction that we need to use, whether it's dynamic nested or soul bound that is able to solve some of the issues that Finbar is explaining to us right now?

Dheeren: Yeah. Music NFTs get really interesting. And Finbar everything how you were explaining it, that's spot on. It's basically you can NFT or tokenize any digital asset. And music today is mostly in the digital form and therefore it's a digital asset and you can tokenize it and you know, the value proposition here is, like you said, you can trace, you can have provenance and go all the way to the source.

You can see all the exchanges that this piece of asset has gone through. So how many hands has it exchanged and all the royalty and other things that you could sort of very easily track, trace and obtain. So keeping in mind that anything can be tokenized and music NFT sort of bring in very different dimension, right?

Like you said, they've got this natural thing around collectability and scarcity. It makes it a perfect kind of an asset for tokenization, for NFT. You know, and then you have... So just, just getting, just peeling the layers there, Kary and getting into the technicalities, right?

Mostly, the music NFT is a music file. It could be an MP3 or a wave file or whatever the format of the file is. But then you could have some other layers on top of it. It could have an artwork, it could have a CD cover equivalent. It could have a lyrics attached to it. So that could be in the form of a PDF. You could have... So the sophistication in the NFT is you could now have different types of files all coming together to form, let's say one song NFT, it's got artwork, it's got music, it's got a PDF file.

And you can implement NFTs in such a way that depending on where this NFT is launched or used, it can render in itself in different ways. So if you stream this in Spotify, it plays the music. If you look at it in open sea, it shows the album art cover. Or if you use a PDF reader to read this, it shows the lyrics.

So you can build the complexities. Today, NFT is so mature and there's so many different techniques that's come along. You can make, what's called a multi resource NFT. Literally you can bring all of these artifacts together and package them as a single NFT. You could have ownership at that package level, or you could even have ownership at the...

You could say, hey, 10 people can, can have ownership on the lyrics. But 2000 people can have ownership on the audio file. And only two people can have ownership on the art. You could do all of that. So, you could apply a lot of NFT techniques. So yeah, Kary, from a technical perspective, NFTs now are so much mature. There's so many different types of creative ways of NFT building that's coming along.

You mentioned dynamic NFT, multi resource NFT, nested NFTs. You could have NFTs within NFTs. But you know, keeping the technologies aside, you can put the artist or the creator in control now, you don't need a lot of middlemen or middle platforms. The creator can produce their creation and distribute it through token technology without technically needing anybody in the middle.

Kary: So now that you are doing your own thing with Rezonix and I wanted to kind of get your understanding on number one, which are your own favorite music NFT platforms? What do you see the difference between them? You know, is there some kind of context relevant platform which you go for when you make a music NFT, and how do you see them getting interconnected? What are your platforms? How do you see them getting interconnected and what's actually creating.



Finbar: So do you mind if I tell you a story before, and then I'll answer that question. Just a very quick story about utility because you mentioned the utility.

Kary: We love stories.

Finbar: So many years ago I worked with a guy called Scott Humphrey, who was a producer. Metallica, you know, Rob Zombie stuff, Motley Crew, all these albums, he's famous producer in LA. So we worked on an application called [Jammit](#). And Jammit won Apple Music "App of the year", I think in 2011. So basically, we had thousands of... We took the multitrack masters of all these bands from Deep purple to Motley Crew, Dream Theater, The Jacksons... And we remixed the actual master tapes. So we got them off the labels. We remixed them, we licensed them. And then we brought it up in an education app. So you could launch this app on your iPad. You could log Jammit. You could buy a song. Let's say Dream Theater, "Pull Me Under" and you could pull out John Tui's guitar part and play along with the real album without his guitar part with his effects.

Then you don't have the tablet chat and then you could actually record yourself with the real band. Now, moving on from that, when I released "The Code", my last album, and I talked to famous guitarist, friends of mine, they make more money from selling their songs without their guitar on it. So guitarists can buy the songs and jam and try and learn their parts and play with the backing tracks.

So with Jammit, we sold songs for \$5.99, we sold over 300,000 songs at \$5.99. When the same song on iTunes at the time when you were buying them was 99 cents. That's a 500% increase. Now the ability to look at that utility means that, you know, if people want these backing tracks, whether it's karaoke, whether it's for guitar or instruction, that has a higher value price than the commodity of their actual mixed version.

So, the ability to have this flexibility in the file and to have these different models allows artists to understand that utility and start to drive into these different markets, educational sector's huge, you know.

So anyway, I just wanted to wrap it on that now when it comes to, you know, the platforms, I think what's really important for a lot of artists to understand is minting. NFTs cost money in a lot of cases, right? So if you're going to be minting your music, you know, you want to be looking at Open Sea or something on Polygon where you don't have the minting fees, really. I would always suggest that people start to play with it before they go in full out into NFTs.

Go and make a couple work out how it works. Get your wallets going, get them linked, get some crypto, just play around and work out how it works before you go full on into, I'm going to mint my NFTs. But yeah, I would think like, what is it Mint Audio, Open Sea. Some of these, some of these platforms. The first thing I would look at if I was an artist, is where can I mint my music for free?

There's no need to be paying, you know, exorbitant, minting fees, unless, you know, you've got an audience waiting to go and buy these things, you know?

Kary: So Dheeren, you've been looking at a lot of these music NFTs platforms as well. Any one of them really pop out to you and you say that, oh, they're doing something unique rather than just being able to tokenize a piece of music and just, you know, sell it over there and speculate?

Dheeren: Yeah, I think, Sound.xyz is a good one. Finbar, I think you could, you could mint there. I don't know what the fees are. Yeah. Check that out.

Finbar: Yeah.

Dheeren: Yeah. But like you said, you can mint it on an open marketplace. You don't have to have sophisticated contracts or anything to test the waters. Or you can do lazy minting, lazy minting is you mint on demand. The user mints it. Or the receiver of this NFT mints it when they want it until then it's not really minted. So there's some techniques, some cost saving gas, saving techniques there. We worked with one of our common friends, Finbar. We worked with Pause Fest, and we help them with their mint strategy or the NFT strategy.

I think the future is you'll have songs on chain and streamed from chain. I think that's the real future. We are not there yet. We are still looking at music NFTs as collectible. So it's just the skew morphic one step forward from art collectible. So, I think we've not gone to full on streaming on chain.

I mean, there are platforms that do it, you know, Catalog for example, and things like that. But I think the ultimate end goal is a completely dow, run streaming platform where creators and music, consumers, and producers



all come together, you know, but you know, around the web 3.0 ethos. Create art, consume art. That's the real future.

Kary: Yeah. And that kind of brings me to one of the main takeaways that I wanted to get away from this episode, which is every time people talk about technology, whether it's like autonomous vehicles or quantum computing or all the other topics that we cover on this podcast, there always seems to be some kind of dichotomy.

When, I mean dichotomy, what I'm saying is like, today, this is how things exist and tomorrow it's going to exist in this way. And it's always like this dramatic shift. I'm a big fan of anything disruptive. It's, you know, something that I've structured my entire job role around, but more importantly, I also have the pragmatic understanding that this is always a question of transition.

That it's very hard to be able to switch from one way of operating in consumption to another one. So taking this into perspective, along with the fact that we've got so many different utilities, value channels, and platforms getting created in the music NFT space, I want to ask this question to the both of you, of how do you think NFTs are going to be integrated into the music space? And what is this transition going to look like for the next year? And maybe a little bit further down the line?

Finbar: I think this whole thing is going to be driven through aspiration. So it's going to be someone who's like in the art space who comes and makes a motor out of their music.

And that's going to be the driving force where, everyone's going to go. It's like when people did this big, you know, Christie's thing, everyone now is making NFTs. And I think it's, this needs to be... I think there will be a seismic shift, but I think it's got to be created by someone who's created that seismic shift.

And so the way the traditional industry that I know, the music industry that I know is they hang on for dear life, to the old model, as much as possible. They don't want to change anything. And so, it's very hard for them to even move a little bit because they're leaving, letting go a little bit of control. But I think the music industry's one of those things whereby it is a unique beast. It's very controlled and it's very locked down. And so I think though, as it's one of those things, like they held off streaming, like they... Look at Napster and look at all of that sort of stuff and the sues and the law lawsuits and all the court cases. Now they're they own these platforms, the labels own, are part owners of all these platforms.

So, it takes a monumental event before the dam breaks and then everyone jumps on board. So, I think at least the way I see it happening is however, this evolves, whether it's on chain streaming, whether it's multiple mixes or however that works, there will be someone that comes out, that breaks the dam that goes and goes against the grain that has enough clout, that has enough of a following to go and drive this.

And I think that that's going to be, if I look back in history of, of the recorded industry, it's always been pretty much something along those lines that's driven that change. So, I can't predict where, what the technical functionality of it will be, but I think it will, it will be hang on for dear life until someone goes and creates the driver in the market.

Dheeren: I think for music NFTs to really take off, we need to create tools that sort of put the artists and the creators in control. We don't have that yet, right? It should be really simple. It's it should be as simple as uploading song using an admin user login in Spotify. It should be as simple as that.

Finbar: Yeah. It should be just like publishing a webpage, right? Should it just go from logic? Just go send the mix, bounce the mix over to the... yeah.

Dheeren: Correct, yeah. I've here's my song. I've proofread it or whatever the equivalent is. I've listened to the song final publish. It should be as simple as that.

And I think that's the first thing. That's the first barrier, you know. You need to really abstract all of these technical complexities. Also, if you think about IEP, there is no standard around how to monetize music NFTs. There is no set standard as yet. It's all sort of evolving. So I think the needs a little bit of smooth, smooth, smoothing out over there.

Look today, if I look at it, there's no really good place to showcase good music, right? We are using art platforms to showcase music. So you go on Open Sea, that was meant for, I don't know, JPEGs and NFT JPEGs, or you go to any other art, NFT art showcases, they're meant for art forms. Not meant for music. So we don't have these platforms yet. And, and they will come sooner or than later.



Finbar: It's interesting you say that, like, because again, historically, like I look at some of my friends who are, you know, big rockstars. They have no interest in learning anything like about this blockchain. They're not interested. They're not like us. They're not driven by their passion to understand technology.

And so whilst you might make the tool simpler, if we look back at the history of why a band manager came in the place in the middle. Earlier on, I said, you know, for those in the middle, between an artist and a fan who can actually provide real value. And I think part of this evolution will be the rise of a new type of intermediary who's helping artists on board. You know, they might still have the tools, but it's not as simple as just uploading from logic. You've got to understand your marketing strategy, how you drive an audience. And I think there'll be a new form of manager who understands this space who, who can really help these artists on board and that's going to then bring them value too.

They can share, they can be a part owner in the band, in the contract, or there's a lot of these different abilities now with the blockchain, for them to be able to be part of the success rather than a fee upfront. So, you know, I think that I think it's going to be really interesting where... I don't have a lot of faith that, you know... Not that I don't have a lot of faith but a lot of artists that I know just want to be artists. They don't want to know about all this stuff.

They just want to, they're interested in making, in having the fans and getting the money, but all this stuff in the middle. So I think it does open a whole new opportunity for a new level of music curator, to be able to be smart about how they develop the contracts. And what does the business plans look like and what do these strategies, and let the artists do their art, you know?

Kary: Yeah. And I think that those are the three main areas where the changes are happening. On one side, just the music creators themselves. I don't think we can use a blanket statement right now and just say that all musicians just want to focus on music and be completely oblivious to how that music is actually generating revenue.

And if you want to be able to be a successful artist, you've got to be able to make money out of it, right? So being able to kind of use these technologies and learn about it quite easily because there's so many resources today. I think that's really changing the way an artist defines themselves today in which they're a one man entrepreneur, in the middle, you've got the curation.

I think the curation, we touched upon it a couple of times in this episode, whether it's using algorithms or it's just being able to sit down and curate really good music. That's something that's very important. You know myself, for example, I really don't have time to sit and make bespoke playlists, which are tailored to a certain mood or to a certain kind of event that's happening in my life right now.

So if I can actually go and pay someone a democratic amount, an amount that makes sense to me in which they're actually providing me to the service, I'm very happy because I've been able to save an hour of my life. And then on the last side, and this is where I think a lot of companies, especially large companies like us really need to absorb this, the lack of a default community mindset.

So Spotify, surprisingly writes this really good report, which they publish every year called "Culture Next" in which they look at the consumers of their product, of their platform and see how they're changing and the last report which they published. I think it was a couple of weeks back or maybe a month at the max was all about how gen Z thinks about music and consumption.

They're no longer kind of going ahead and doing the whole, oh, I'm a crazy fan, kind of a person. They also want to be involved in it. There's a lot more participation that they're looking for at collaboration contribution and not just being someone who's passive and absorbing whatever was put out there by whichever artist they want.

And they have so much choice today that they can jump. So these three changes are extremely cultural, but they are leveraged through technology. And one of my favorite quotes is Ursula Le Guin, who's an anthropologist. She actually said, "Technology is the carrier bag of culture." And I think what music NFTs are actually doing right now is showing how these cultures for different audiences are evolving and the role of music NFTs and all of it.

So, we are coming towards the end of this podcast. And Finbar, we have a bit of a tradition going on in this young podcast. We call it the "quick fire round." And it's pretty simple. I ask around five questions using one word or just like very few words. And you have to be able to respond in a similar way, either use single word or use less than five words to give your opinion about this one word that I say, are you ready?

Finbar: I think so, yeah.



Kary: Number one, record labels.

Finbar: History.

Kary: Number two, streaming platforms.

Finbar: History.

Kary: Number three, silence.

Finbar: Golden.

Kary: Number four, Rezonyk.

Finbar: Inspiring.

Kary: Number five. Metallica.

Finbar: History.

Kary: Oh my God. Okay. That's going to stir a little bit of trouble.

Finbar: Well, I like stirring trouble. Oh, you asked my opinion. I'm not trying to cater it to the masses.

Kary: We wanted it. We wanted it. We asked what we got for I'm happy. This is a success in my book.

Finbar: Look, I love Metallica. I just think that it's what's interesting to me is that Stranger Things. You get these people that are buying these big catalogs and it just goes to show the power of the, the medium, right?

So the song itself like Kate Bush, and you get a show that reintroduces... I remember meeting Slash when Guitar Hero, you know, had the Slash on that guitar, that game, and that blew him up. He became bigger than the band because of the game. But it just shows you that, that it's the, the music by itself has got a finite amount of value, but when it's attached to these other properties, it can just explode, you know?

Kary: No, that that's, I think that's a good takeaway and a good way to conclude the star this episode, because it really showcases the power of the individual. For too long, we've seen creatives and the whole concept of the struggling artists just being taken for granted.

This is the way things are, et cetera, et cetera. So I think that paradigm being able to transition to be able to have a new way of looking about it. And of course it's going to have barriers, anything new does involve the necessary to put an effort so that you can adapt to it. But the fact that there is a channel of adaptation.

I think that's something which is really interesting and myself, for sure. I'm going to be looking at the music NFT space, seeing how it can be used in forms of creation, curation investing.

Finbar: Well, you'll have to check out my new NFTs when they dropped they'll be coming out, I think, in the next week.

Kary: Well, I was under the impression that I was already on the white list. I mean, why else are you on the podcast?

Yeah, no problem.

Dheeren: Both of us. That's two of us. That's two white list spots.

Kary: Yeah, yeah, exactly. We got to get that right. Some kind of tertiary advantage of doing all of this, but now it was, it's really great to have got this insight from you.

We will be keeping an eye out for the NFT drop and it comes out in the next week. You hear it here first. So Finbar, Dheeren. Thank you so very much for coming on the show. Finbar, could you tell people where they find you?

Finbar: You can find me, I've got some music on [my finbarohanlon.com website](https://myfinbarohanlon.com). My LinkedIn has all my projects that I'm working on, all the technology things, Rezonyx...

So if you look at LinkedIn and just type in my name, Finbar Hanlon, that's probably the most up to date place where you'll find stuff from me. And [my YouTube channel](#) as well.

Kary: So thank you at home for listening. And if you enjoy this episode, don't forget to listen to some of our recent episodes on all things related to web three, you can find the links in our show notes.



Please do subscribe on Apple Podcast, Spotify, or wherever you get your podcast. We're present pretty much everywhere, and we will be back next week where we'll be discussing food waste, trying to understand the complex challenges around it and how technology could provide an answer to them. This has been Future Sight, a show from Capgemini Invent.

We'll see you soon.

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