Erick Calderon, CEO of Art Blocks, on the evolution of NFT marketplaces

TEAM

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Background

Erick Calderon is the CEO of Art Blocks. We talked to Erick to learn more about the rise of NFTs, the marketplace model of companies like OpenSea and Rarible, and future use cases for NFTs.

Interview

Can you talk a bit about Art Blocks and the market opportunity you built it around? What are the challenges artists have, and what is the value of listing on Art Blocks?

The value of listing on Art Blocks is that we're going above and beyond trying to curate the best possible generative art that's out there. That's something that has been evolving over the course of our first year in existence.

Originally, Art Blocks was "You can code a square to appear on a screen." Today, we have a backlog of hundreds of artists at any given moment that want to participate and we have had just incredible luck to get to host what I consider to be some of those brilliant works of generative art on our platform. We want to make sure to continue to give those really wonderful artworks a good home, and to do that, we're curating.

In return for that, the artist gets a little bit of a less noisy introduction into both the NFT space and/or the generative art space, depending on whether it's just an engineer that knows how to code but decided that they also had a creative contribution to make to the world, or if it's a generative artist that is trying to enter the NFT space and try to get some recognition.

We have a significant group of people that are aware of our platform and collect on our platform, and they have elevated just by collecting and sharing the works that appear on our platform.

Can you talk about how you reached your initial product market fit and give us any measurables or milestones on where you are?

I spent years and years, first, even before the blockchain, ideating the concept of generative minting and sharing that with people and letting other people have control over a visual output. Then when the blockchain came around and then eventually an understanding of what an NFT was, to me, the idea that you could own something digital and algorithmic just kind of felt right. Who knows what would've happened if Art Blocks would've launched in 2018. It's really hard to know. Who knows what would've happened if Art Blocks would've launched when gas cost more than a mint, or if some OGs weren't in the CryptoPunks Discord on launch day talking about Art Block and how great it was? Who knows.

What I do know is that as people explored and learned about Art Blocks, they definitely found a fit when it comes to the toolset that we use to generate and keep track of art. All else aside, one of my big goals in the NFT space, just in the crypto space, was always to make something that wouldn't really work well without crypto.

In reality, the concept of Art Blocks was storing algorithms on-chain and creating provenance, not just in the ownership, but in the variability of an output, coupled with the fact that the outputs are not stuck to whatever technology we have today, but are going to be resolution agnostic and going to be viewable and in their full glory and any resolution in the future as technology advances, to me felt like a perfect combination of things that as people explored, all the different entities that were coming around at the time, this one stood out as being different, special, with a long term vision.

Can you talk about how artists market and sell their NFTs? How do they think about listing on Art Blocks, OpenSea, Foundation, Rarible, and others?

We want to see artists do the full circuit. We want to see artists deploy on other generative art platforms. We want to see them explore the metaverse and everything that it has to offer. There is a clear distinction between a generative art platform and a non-generative art platform, so Foundation—I'm just madly in love with that platform and everything that they stand for, but the process is very different.

With a platform like Foundation or OpenSea, the artist will generate an output in advance, and then they will tokenize it, so they will turn it into an NFT, and then they still own it. Then they can list it for sale if they choose.

With Art Blocks, it's the opposite. The tokenization doesn't happen until it's purchased. The artist creates an algorithm, puts it on-chain, decides an edition size. Then it's at the point of purchase that the output is generated, and the artist never actually owns it. It goes straight into the collector's wallet. The collector is doing the process of minting the NFT, and that makes the type of art that we are making on Art Blocks inherently incompatible currently with Foundation or Super Rare.

Async did a really beautiful kind of layering generative concept, which I think is brilliant. It's perfect for their platform. They're more compatible—they have an infrastructure specific for multiple mints of the same piece.

I'd say the number one response to that is just the utility of doing this on Art Blocks is very native to the generative art

space. It can only be utilized if you understand how to write an algorithm that produces visual outputs versus with most other NFT platforms, you generate a visual output however you want to generate a visual output, and then you create an NFT and list it for sale.

Artists that are creating on Art Blocks, generative in nature, do they really need to worry as much about distribution channels like Discord, for example, to build the pipeline, to sell to people, or are they more just relying on traffic to your door?

It depends. I think there's a lot of sides to this. There are brilliant artists that come on Art Blocks and do a drop and disappear, and their art is brilliant, so it maintains value. There's a lot of artists that come on Art Blocks, and they stick around, and those are both brilliant artists but maybe it's not one of those drops that blows people's minds, but it's just a wonderful algorithmic piece of art. A lot of these artists; they participate; they're involved daily in the community. Why? Because I think they're kind of excited to hang out there. For the most part, I'm excited to hang out in the community. Obviously as the creator, I also get yelled at a lot, get a lot of feedback, and so there's some aversion to it, but otherwise, the opportunity to get to interact with your collectors is something really special.

It works because of the nature of the 1 of 1 of X concept. 1 of 1 of X being that every output is unique out of an addition of X. The bigger the addition, the more people that get to participate in the dialogue about that addition and about that collection. What better place than Discord to be able to have those conversations, to be able to post images of your outputs and be like check mine out, look at this?

We drive traffic to Art Blocks artists, especially new ones that don't have a reputation in the generative art or in the NFT space, because we do drops that are monitored by thousands of people, thousands of people keep up, and they may not know the artists, but they know that Art Block is doing one or two drops on Tuesday, one or two drops on Thursday, and one or two drops on Friday.

In that sense, I believe that a lot of artists benefit from just the audience that we have. We also have this differentiation between a curated and then a playground and a factory and

piece, and the curated pieces do have that extra stamp of approval from Art Blocks as utilizing generative technology to mint multiples of an addition in the best possible way that it could be done. There, I do believe that if an artist is new to the scene, they are significantly benefiting from Art Blocks, from our traffic and our audience. I would also venture to say that Art Blocks significantly benefits from the artists that achieve the curation status that come from the generative art or traditional art world that bring their own audience because those drops are more highly anticipated both by our community and by the community of people that follows that artist in general.

Switching over to marketplaces, can you talk about OpenSea as infrastructure versus using them as a secondary marketplace? Why are you using OpenSea when they're normally competitive? Could you run Art Blocks without them?

As to how competitive they are, I see the incredible amount of work and dedication they've put into this space from 2019 when I met them to today. The art space takes it incredibly for granted the amount of effort that they put into growing what they've done. There can be many competitors in this space, and I do believe that there's going to be many major players in this space, but I take it personally when people can be so aggressive against OpenSea because I've watched them grow. Our entire team has dealt with months of hype and intense speculation and just anger and "When are you going to do this?" It's like, "Well, shit, we have four people on our team because last month we sold this much, and now it's like a hundred tons more."

There's absolute taking for granted of the pioneer platform in this space. I'd like to picture what Art Blocks would be without OpenSea. I'd also like to picture what Art Blocks would be without Discord. Art Blocks has been validated as something that people appreciate collecting, but if there was no OpenSea, where would they collect it? I wrote the smart contract for Art Blocks and the server as a total novice coder. I literally learned to code so that I could write these things and the smart contract—I had a lot of help on, but I didn't have it in my wheelhouse to also build a marketplace for Art Blocks. I don't actually think that would've made Art Blocks an even better platform.

OpenSea is not infrastructure by choice. OpenSea is a monster mechanism that automatically picks up any NFT invented in the entire ecosystem, which is pretty brilliant. OpenSea picks up everything that's created in Art Blocks and immediately creates a storefront for it automatically. There's been some friction, there's been some growth issues and some major pains there, but they're also having to custom make their thing for Art Blocks, and I'm very grateful that they're willing to do that for us. But I don't look at it as infrastructure per se and how we build our product.

We are actually in the business of hosting and deploying, hopefully, the best generative artwork in the world and are grateful that there's a wonderful marketplace for us. I am also grateful that there's going to be options for people, not because I want OpenSea to have any less business, but because of how angry people get and how frustrated people feel when there's no other option. That drives a lot of the hostility too. It's just like you're kind of stuck.

If you want to participate in this space, especially from a speculative perspective, you don't really have a lot of options, and those options are coming up. You've already seen a few in the last few weeks. You're going to see a few more in the next few months. I'd say by the end of this year, you're going to have 10 pretty reasonable places to go and purchase your NFTs. So I just don't see any downside to the amount of reliance that we've had on OpenSea other than the fact that it does become out of our control when something goes wrong with OpenSea and people are reliant, and it reflects negatively on Art Blocks when OpenSea goes down.

Do you think there are similar parallels between OpenSea and say Coinbase? If Coinbase goes down, everyone complains, they get on Twitter, a similar pioneer in the space. And you could make an argument there's room for Kraken and for Gemini, and these are all thriving businesses. Do you see a similar dynamic in the NFT?

Absolutely. I think that OpenSea did a really fantastic job of helping us show our collections to the best of their ability without reinventing their entire product for us, but actually doing a significant amount of surgery on their product to make it accommodate us. As you see other marketplaces come out that are literally created to cater to generative art as a medium,

I can see that taking some market share away from OpenSea because I don't know that OpenSea can react or be as flexible or pivot as quickly because they are onboarding a bunch of engineers too. Psychologically, there's a pre-August 2021 era, and there's a post-August 2021 era where people just assume that because you're selling a lot of stuff, you have a hundred new engineers just show up in your office, and they all know how to work together, and they're all happy with their job, and they don't have any questions about benefits and how to start a job. And that doesn't actually happen.

I feel like Coinbase has had many, many years to build up, and they still have outages. OpenSea has had many years to build up. They have outages. Art Block has had a year to build up, and we have outages. This is all still very much the wild west, in my opinion. No matter where the volume or liquidity is in the space, because I can't control that, I will always be infinitely grateful for OpenSea adopting what we're doing early, way before we were generating a bunch of income for them, and taking us under their wing to make sure that our stuff was represented in the best possible way.

What's really going to reflect moving forward is how the new marketplaces embrace Art Blocks. So we are weird. We have a weird way of doing stuff, not as weird as it was last year. Now there's other competitors to Art Blocks that operate in a similar way, but we have a classification of projects that creates cyber storefronts, and then we have features within each project that is what the whole industry nerds out over. And it'll be interesting to see how some of these massive, new entrants into the NFT world will handle Art Blocks and whether they will give Art Blocks the love that OpenSea gave us early on when there was no money to be made by creating adequate sortable storefronts that let you sort by project and by artists, or if they may not get to that right when they launch because everybody's just scrambling to launch, which is totally understandable too.

We'll see. I think it's going to be a really interesting conversation as you see these marketplaces evolve. I see a lot of competition in the NFT space in general between different platforms. Guess what, competition comes around, it's new, it's fresh, it's grassroots, it stumbles. Everybody is going to thrive in this space. There's room for everybody. But guess what? Time goes into building these things, and reliability is hard in this space, and it's really hard to go out the gate and get it right

the first time, no matter how much time you put into it. I think people are going to have a little bit more grace towards OpenSea when they see that we're all human and all of the new marketplaces are also human and are going to have their own set of struggles. I think as long as everybody works together to work through them, I think everything will be okay. **We alluded to this; 2021 saw a frenzy of speculation around NFTs. How have you balanced supply and demand to keep the art on Art Blocks accessible? And are you still seeing a strong demand, or have you seen it shift in any way recently?**

Because of the so-called nature of crypto, I think being reactionary often backfires, and it can backfire on a lot of different levels, so we have not changed anything significant.

However, if you look at every single crypto project that has ever existed in the history of humanity, not a single one has gone like this forever. To me, there's always this fear, especially when it starts getting parabolic, that there is a significant chance that it's going to come down and it's going to come down hard. I fear that the momentum that happens in this space makes rational human beings, including myself, participate in this excitement as a result of saying, "I did this, I think in 2017 with a bunch of altcoins." And our reactions have been to kind of just hold steady.

What that means is that some people, including myself, paid a lot of money for art in August or September of last year that's not worth that much on the secondary market today, but that also means that a lot of the reason that art was more expensive then is because it's just human nature. Humans saw other humans making a killing. It's like, "Whoa, I want a part of that."

Well, when everybody has a part of that, then there's actually no more to go up anymore. That's when people realize that they've over-invested or they got in too high, and it goes away. Because I felt confident that blip in August and September was not actually sustainable, it's something that I try to communicate as much as possible when I have a chance to speak to people on podcasts and stuff. I felt that it would be a mistake to become way too reactionary to that.

I'm okay with people speculating on Art Blocks and NFTs and on art. There is a mindset of, "I am entitled to make a profit and guaranteed to make a profit." If you put that in a bubble, that is exactly what causes these things. If you're not assuming guaranteed returns, then you're not going to buy something at what feels like a pretty unreasonable price. You're going to be like, "Oh, well, no, I might not make a return." Then you don't buy it at that price.

As that has gone away... I wouldn't say gone away, but as it has softened, the prices on our Dutch auctions have settled significantly lower, and factory projects aren't selling out. I think that's a positive thing. We've always wanted to have projects sitting there in the factory.

We want people to have the experience of browsing a bunch of cool generative art and picking one, not based on some kind of intense moment of a drop, but on demand. We're concerned that that number of projects could become excessive because we have a huge backlog of applications, and as we go through them, we realize there's a lot of really good art coming out. It's like we need to make room for all this stuff too. As the market has settled a bit, we are all enjoying our job more at Art Blocks, every single one of us.

I think that the collectors that are there for the art are enjoying the process more of a slower mint. And I think overall, we're in a really good place because we also have the ability to reference August. I think not having the ability to reference that in the past, we could all say all day long this is just crazy, whatever. But now, things get heated, we could be like, "Look guys, look what happened in August. This was just four months ago. I know this is crypto and we all have ADD, but this just happened four months ago, five months ago, and it's happening again." Be careful. Consider the zero-sum game that's being played by a lot of people.

I think we're in a much better spot, and obviously, we always have surprises and fires and dumpster fires, but we're in a spot where we feel like we're at least approaching homeostasis, and that's actually our target. These blips are not the target. The target is Art Blocks achieving a moment of homeostasis where it feels like people are paying fair market value for art based on not what it's going to be worth tomorrow or the next

day, but what it might be worth a few weeks or months or years down the line.

Can you talk about the primary and secondary economics of listing art on Art Blocks? Let's just say a piece sold for a million bucks. How does that get distributed between fees and charitable donations, and then what about the secondary economics around resale?

Very cleanly, Art Blocks takes 10% of every primary and 2.5% of every secondary sale, just to take Art Blocks out of that conversation. From there, what's left depends. In the primary, when projects were selling out at 15 million bucks in 30 minutes, and while we want the artist to make as much money as possible, I think both the artist and Art Blocks realized that sum was just tremendous and maybe not fully representative of a long term valuation of art. What we wanted to do is help shift a little bit of that funding into a charitable contribution, so what we've done is we have artists donate. They pick a charity, and for the most part, it happens at a smart contract level, which is really beautiful.

The transparency of our ecosystem is just really special. What we say is any mints that are purchased above resting price in a Dutch auction, because a Dutch auction has the tendency to expose the price, 25% of that should go to charity. Some of them don't make the donation directly on chain because of tax implications. Some of them don't do it direclty because there's multiple beneficiaries involved. Some people don't do it directly because they want to send it to seven charities, and obviously our smart contract only allows for one. But any mint that happens above whatever the artist declares is the resting price of their drop, and 25% of the value will go to charity.

On the secondary market, it's a little bit more tricky. Art Blocks has a function in the smart contract that allows an artist to set their secondary market loyalty at the contract level, but that has to be recognized by the marketplace. We have two scenarios. We have the fully decentralized model. So Rarible and, I think to some degree, LooksRare, although we're working to make that even better—they immediately at the time of purchase read the Art Block smart contract, check who the artist is, and check if there's a secondary beneficiary like a charity and actually listen to what the artist selected as their royalty. Rarible automatically splits the payment between the artists, the secondary beneficiary, and Art Blocks, and that can

be at whatever rate the artist sets. If the artist wants to set a 50% royalty, they can. Obviously, the buyer and the seller hopefully should know about that, and I think that Rarible makes that absolutely clear.

The other one is that we have a more centralized version. OpenSea aggregates all of the secondary market royalties and then sends them out once a month or once every two weeks or when things are really crazy, like every three days, which is a little intense. We have to set a single loyalty rate for all of the storefronts on OpenSea that's the same, and so we set that at 5%, which originally felt low, because a lot of other marketplaces have 10 and 15%. In the generative world, though, where there's so much movement and action in daily liquidity, for lack of a better word, 5% ends up being a really nice royalty for artists, and so we think that's actually a pretty good baseline. When an artist sets a royalty of 10% on the contract, they're actually kind of creating an incentive for people to sell on OpenSea versus on Rarible because it literally costs them more to sell it on Rarible.

Ultimately, we encourage artists to just stick with the 5% rule, but it's their decision, and we don't necessarily want to control them. At the moment, when it comes time to distribute royalties, we get a lump sum at Art Blocks, and then we have to distribute it manually to all artists. If and when OpenSea gets to a point where that's no longer the case, I think artists will have the ability to set their royalties based on what they want, not based on a blanket royalty of 5%.

How do you actually store generative art on the blockchain? To what extent are different parameters actually stored on the blockchain rather than in an S3 bucket, and why is that important for sellers and buyers?

If you take a highly dynamic unit of output, like any Art Blocks piece, some of them are over four megabytes. They have such incredible complexity and detail in them. In the traditional world of NFTs, if that even exists, you would take that four-megabyte file, and you would have to host it on what's called decentralized storage. It's not fully decentralized when it's IPFS, but IPFS is a brilliant, genius concept for decentralized storage. That's not actually stored on-chain. The concept of Art Blocks is that the value of on-chain generative art is that the information necessary to create that four-megabyte image that cannot live on-chain is stored on-chain. This is the algorithm.

In some cases, the entirety of the algorithm lives on the blockchain, but an external library is allowed—the most common one being p5js, then there's another one called 3js. Ideally, with anything that's stored on-chain, you would be able to reproduce it just following the logic of what the artist wrote.

What's really important to note is that IPFS, if you store one image on-chain, you have one single image that belongs to one out of billions of NFTs or millions of NFTs that needs to be kept track of. With Art Blocks, these external dependencies are not kept on-chain, for example, p5js being the most prominent one.

Number one, 100 or 200 projects on Art Blocks are using that dependency, so it's not like an IPFS image where one NFT needs that one thing, but hundreds of people and projects depend on that.

Number two, the distribution of that dependency is—I'm 99% sure—significantly more distributed than Ethereum itself. In other words, more computers and servers and GitHub repos and whatever are hosting p5js right now, internalized on all sorts of backups and systems, than there are people actually hosting Ethereum nodes.

If what we're trying to do is have our art be internalized, then that feels very decentralized, and it feels very secure that you cannot reproduce your output when that dependency is gone.

The beauty of an Art Block piece is that storage on the blockchain is incredibly expensive. You cannot store a four-megabyte image. If I had to guess, it would cost two or three million bucks to store four megabytes on the blockchain. I'm just totally throwing a number out there.

Then, imagine we have additions of a thousand, so multiply that by a thousand. Take all of that and then just sum it up to the fact that there's one algorithm that's usually 50 kilobytes, let's say it's 1% of the size of one image, and that one algorithm has the instructions to produce a seemingly unlimited number of four-megabyte files that are all 100% unique using the technology that Art Blocks has created. The NFT stores only a variable, a hash string that contains the variability of the art, and the blockchain stores the script for the art one time.

What Art Blocks is doing is combining the algorithm that the artist created with the variability that's minted onto the token into a single output, so the algorithm is actually useless without the mint. The mint is also useless without the algorithm, but when combined, you get what we call a deterministic output, which means anytime that you combine those two same things, they produce the exact same output no matter what browser, no matter what. Obviously, we're going to face some struggles in the future as there's breaking changes in browsers, and we can have an entire conversation based around that.

The other point about putting something on-chain that's like that four-megabyte file is that if it was created on a screen that was 10 times bigger, it would now generate a 40-megabyte or 160-megabyte file. The point being that the resolution of the file, being that it's generated algorithmically, is 100% independent of the algorithm. Let's say in 10 years, screens have four times the resolution—that same output would either have to be upsampled, or it would have to be smaller than the screen, one or the other, because it's a static image. If you're generating an Art Blocks output in 10 years, it will look exactly the same on that higher resolution screen than it looks on your screen today.

Some NFTs are meant to be game assets, and they're composable in the sense that different developers can build them using them for different worlds. That same dynamic doesn't seem to exist here. What are the use cases? Is it mostly buy and hold and resell, or are there other more utilitarian use cases for these NFTs on Art Blocks?

The utility of the NFTs on Art Blocks is to be a work of art that you hang on your wall. That's our priority.

What's beautiful about NFTs in the ecosystem is that everything's a building block, and everything's interoperable. If people want to assign utility to the NFT after the fact, they can.

A perfect example of that is a DAO that requires you to own a certain NFT to join. That can be an Art Blocks NFT. There's a DAO called SquiggleDAO that anybody that owns a Squiggle could enter the Discord and participate. We are truly focused

on creating art and distributing art to potentially a new group of buyers that may not have been interested in art. If those buyers are interested in it because it looks freaking cool on their screen or on their wall, awesome. If they're interested in it because it's going to enable them to go do something useful with it, awesome.

We ultimately just want people to enjoy the individuality of each mint that comes of a minter. Because of that, Art Blocks has rules in place that do not allow an artist to advertise their drop as a utility.

We have a drop that happened the other day, and it's these little eight-bit characters, and it was not advertised as being characters for a game. People came to conclusions about it. That wasn't part of the marketing or part of the narrative, but as soon as it was over, the artist was like, "Okay, now I'm going to make a video game out of these things." This artist is so prolific and so great, and I'm pretty sure he's going to do it, but who knows if they do it. In the end, this space is full of promises generally, and it's hard to hold anyone accountable, but the fact that he didn't announce the game until after the drop holds us a little bit less accountable for whether he makes the game or not.

That anecdote right there is exactly why we want to make sure that we do not allow anybody to present the generation of an NFT as a utility. That said, we have this entire other enterprise version of our project. It's called Powered by Art Blocks, which enables people to use all of our technology, almost like a white label version of Art Blocks. They use the backend technology and soon to be also the front-end technology to generate their own artworks and generate their own pieces. And there's no rules. There are DAOs that are going to be built powered by Art Blocks iterations. There's something nice about if I have a concert and I'm going to give away 100 tickets or sell 100 tickets, there's something nice about the fact that each of those tickets is created by the musician, and they're all unique.

Some people don't care; they're just going to throw them away. Some people are going to cherish the fact that they have 101 of that. One thing is you have fungibility and utility. You can create utility with something as simple as creating an ERC-20 token, and everybody's utility is based on full numbers and fractions of that token. If you have one token, you have one vote. If you have 0.5 tokens, you have 0.5 votes.

Or, you can create that utility within NFT, and I think where Art Blocks adds a personalization layer is that each one of those NFTs can have its own function or value in the greater ecosystem. You'll see some really fun powered-by-Art-Blocks applications that are actually going to utilize and advertise that in a way that does not feel conflicting with what we're presenting on Art Blocks proper, which is just the best art from the best artists side by side, with each other.

To what extent might Art Blocks replicate the old-world art problem of a gatekeeper holding the keys that allow artists to access the right kinds of buyers?

I don't think it actually is an old-world problem associated with the traditional art world as much as it's an old-world problem of there being more demand than supply for something.

That supply and demand equation is happening in two places. It's happening on the selling side. There are times when there's more buyers than NFTs, and a drop has a thousand mints. Usually, there's more than a thousand people sitting on the Discord watching the mint, and so there's just not enough for everybody to have one.

On the artist side, there's actually, believe it or not, physical limitations of humans and human bandwidth, especially with a growing startup. At one point, the idea of Art Blocks was to have a free for all platform where anybody can do anything that they wanted. That was the original idea.

Then we found ourselves pouring ourselves into each artist and each drop and really digging into the mechanics of the tools that we're using in the blockchain and how artists feel about dropping art and how the conversation happens after the drop. We realized that we were sitting on something that was well beyond what I originally created for Art Blocks, and in order to make sure that it's a positive and friendly place, we were not willing to sacrifice positivity and inclusivity in exchange for having a completely open platform.

Unfortunately, as Art Blocks has grown in popularity and the list of applications has grown exponentially, we've had no choice but to start picking and choosing the art. I feel confident that the art that's selected on Art Blocks is based on merit.

What's going to happen—and we mentioned homeostasis earlier—we are nowhere near homeostasis. The problem is when there's too much noise. Let's say Art Blocks is getting a thousand applicants a week. How does merit have an opportunity to shine through the noise? The same thing is going to happen on OpenSea with NFTs minted there and on SuperRare and on any other platform. The more volume you have—both collectors and artists—the more difficult it is for artists to break through.

In the traditional art world, a lot of people look down on it or struggle with the lack of inclusivity. When you see that, you think, "What is the traditional art world doing?" The traditional art world is finding the artists that they believe have the merit to be exposed publicly. In some cases, maybe it's because it's their son or daughter, or maybe it's because it's their cousin.

There are other meritocracies that maybe are not involved here, but for the most part, it's the business of a gallery feeling that this artist is going to produce a certain amount of income for them. They are the ones going out there and digging through the noise to find the artists.

We're not there yet with Art Blocks. We are not going out to find anybody. We have a long, long list of applicants that are interested in deploying art on our platform. While we are unfortunately rejecting a significant amount of those just because we just don't have the manpower, we have a lot of sentiment in the community that we're already doing too many drops.

If we're doing too many drops instead of tripling the drops because we have tripled the applications, we just triple the difficulty of entering the platform, which means elevating the value of the art that's entering the platform and the ecosystem.

That will be conflated with the traditional art world's gatekeeping, and the only thing I can say about it is that was not the intention of Art Blocks from the beginning, but I don't know how else you would do it unless you want to do a totally open platform.

There's beautiful projects like fxhash, for example, that's on Tezos. It's an incredible place for people to go and mint and

create stuff without having to follow these rules or deal with the bureaucracy that is Art Blocks now, because it's gotten kind of bureaucratic in terms of the application process, and you have to sign contracts to put stuff on the platform, and it feels more corporate. If we wanted to, we could start an L2 open platform using our technology in a heartbeat. We could release that in two weeks. Given how much I and our team have been yelled at for things that often feel outside of our control, however, and given some of the tensions that have happened in the past when artists misappropriated other artists' work or utilized code without the right attribution—I don't have the courage or the brainpower or the bandwidth to subject myself and my team to the uncertainty of somebody deploying something that's ripping off another existing artist's work.

There's already been Squiggles that immediately get shut down by fxhash. I have a lot of respect for them because they shut that down. They can't because it's all decentralized, and I don't think they can truly shut it down. They just have a little banner at the top that says, "Hey, this has been noted as being counterfeit," or whatever.

We can take two paths. We can take the path of volume and just let everybody do whatever they want, or we can take the path of generative art and nerds. We want to take the path where we are exposed and surrounded by the best freaking art.

You have to decide where are you going to give? To me, we're giving up the open nature of what we're doing, being able to allow any artist on the platform, in exchange for working with the best stuff that's being put out there. It's a hard decision that was, again, not what we set out to do with Art Blocks, but it very much feels like how I want to lead my life. I want to live my life above the surface and not have to constantly worry about IP issues and the potential of open platforms. What's beautiful about this space is there's room for another five Art Blocks and another five fxhashes, and each of them with their own niche and their own styles. It's going to be beautiful to see Art Blocks artists then do the circuits between both the Power by Art Blocks and the other platforms.

It's really special to see and let them express themselves in different ways, using the different parameters that all the platforms offer. In the end, we hope that we are helping outside collectors that may or may not be experts at blockchain or

experts at NFTs filter through some of the insane amounts of noise that you have on some of these open platforms to be able to just produce the best of the best. It took a while for us to settle and accept that, but we're okay with that.

Can you talk about the infrastructure you provide to host and make the generative art interactive and what makes it preferable to use Art Blocks versus do this manually if you're an artist?

Interactive—you nailed it.

I started Art Blocks for a lot of different reasons. One of them is that I was involved in what's called projection mapping, which is a technique where you project objects through a projector.

I don't know if you've ever tried to line up a projector, but it's actually very difficult to do. You need to be able to modify the stream of video that's coming out to align with 3D objects on a wall. A typical gif would not enable you to do that. If you had an output that was meant to be projected onto the specific surface, you would have to move the projector up and down and forward and tilt it, and maybe you'd get it, but the chances are no.

The interactivity of Art Blocks spawned my desire to create an on-chain NFT asset that could be manipulated while still maintaining its original intended state. Our infrastructure is serving into your browser. We will eventually host Python and compiled C and Blender and all these other really cool things that can't be run in the browser. The beauty of what Art Blocks is doing right now, however, is that when you visit the live view of a piece, not when you open the stored image that's stored on S3, but when you view the live version of the piece, you're viewing the algorithm that's stored on the blockchain plus the hash string that's stored on the blockchain, served in your browser in real time.

You should make this distinction between, for example, we have Ringers, which is a totally static piece. People probably take it for granted, and that's fine. As a huge nerd of all these technological things coming together, I know that Ringers is actually being generated on demand even though it's static. It might as well be a JPEG brought in from S3 because they look exactly the same if they're the same size. We are serving you the moment in which the algorithm is being generated live on

your screen, and that is the infrastructure that has been so hard to refine and to build up over time to be reliable because we're reliant on Web3 interactivity, we're reliant on service providers and all sorts of stuff. The result of that is that our infrastructure is enabling you as a collector and also as a spectator because what's beautiful about NFTs is anybody can view any NFT in the world. There's no gate-keeping there, and that's really special.

That enables you, as the collector, to experience your art in the way that it was meant to be experienced. For static pieces, reserve that for the super nerds like me that are like, "Oh man, these Ringers or this Credenza or whatever are actually being computed in the background, but all I see is the final output."

The other ones, the ones that are interactive, or the ones that build up into their final state, those pieces really harness the technology because they enable you to be able to interact with a piece of art that is immutable and provable and deterministic for the first time in history, in our current technology. That's what our infrastructure does. We're enabling artists to have a place to put their algorithm, and we're enabling collectors to have a place to purchase mints that combine the algorithm in a mint on demand and is presented to them in a way that's running in their browser in real time.

Can you talk about the tech stack at all? What are the key pieces of infrastructure?

I wrote Art Blocks as someone that studied on the Codecademy website for a few months. I wrote the infrastructure as a node server, and the frontend was React, JavaScript React. Obviously, we have a smart contract.

The idea is that on the frontend, you are sending a smart contract transaction to the smart contract, and then on the backend, the infrastructure is sensing for the new mint. The moment that it senses the new mint—and it allows for three confirmations because we've had block reorgs that present people the wrong output, which is really disappointing when the output you get you like better than the one that you actually end up getting— the infrastructure renders the mint, because most places need a thumbnail or an image.

One of the most beautiful things that happened last year was when OpenSea, when you opened the Art Blocks mint, instead

of it just grabbing the image from S3, it started playing the live algorithm in a little box. So that was really special. But we also need to generate a rendering because a lot of platforms need a rendered image to be able to display, so we have our API that returns the information necessary to recreate the image. It returns a lot of the metadata, a lot of which is not on-chain because ultimately, what's on-chain is the art itself.

I definitely went through a transition where I handed off engineering entirely to a very special and brilliant group of engineers that have really taken my science project and turned it into a very robust engineering masterpiece, in my opinion. As that's happened, I've taken a step back, so I don't know exactly how it all works anymore, which is really sad, but also, my bandwidth just doesn't permit that level of diving in.

Looking out towards the future, do you see a world where Art Blocks is the world's top gallery, or is it more of a platform vision where Art Blocks functions as a gallery of galleries? How do you think about potential scaling to other forms of generative art with use cases like gaming, like you mentioned?

There's so much, and it's so exciting. We don't want to be the world's top gallery because that would mean that the world only cares about generative art, but I do think that there's an appeal that generative art has towards the masses in a way that a traditional gallery can't because we can enable a thousand people to own something in a very different mechanical method.

If you say top gallery in terms of participation and volume, maybe, but top gallery in terms of the refined art world, there's no reason for that. There is art that is inherently incompatible with NFTs and blockchain that will still continue to be art.

A lot of the problem that I find these days is this desire for divisiveness between the traditional art world and the NFT thing. NFT is just a file type. We are utilizing the technology that is presented to us in the best possible way that I could come up with as an entrepreneur, and it's working, and people are loving it.

What that means to me is that we would collaborate. We would work closely with the more traditional art world galleries that are embracing our product. We can learn so much from them,

and they can learn a lot from us; we will gain new collectors from them, and they will gain new collectors from us. There's this beautiful opportunity for everybody to play in the same sandpit and not necessarily try to be the biggest.

What I want instead of being the greatest or the biggest gallery is just to be a gallery. I want people to respect what we put out there and to respect the blood, sweat, tears that we've put into creating this platform. For sure, I would love to be the best generative gallery and platform in the world.

Where we distinguish gallery and platform is that we have this beautiful Powered by Art Blocks thing. We're in our fourth month. We have seven active projects. For the most part, anything that each of us is releasing is selling out relatively quickly, which means that there's a validation that this technology can be used for other stuff.

While we will not allow a fast-food chain to necessarily sit next to a Fidenza on Art Blocks, because we're staying away from the corporate concept, there's a lot of really awesome opportunities for fast food chains and restaurants and car manufacturers and sports teams to utilize this technology as a utility and as a reward metric for customers and a retention mechanism.

We will shift towards becoming a platform, and that platform will enable other people to participate in other levels of Art Blocks. Ultimately, an open platform, for example, could exist by utilizing our technology. Someone just needs to have the courage to deal with the IP stuff and the intensity of the crypto world and the openness of the platform and the potential for really scary things to be generated, but we can be a service provider for them and literally spin up an open platform on an L2 within a few weeks for somebody to then go off and do whatever they want and compete with whoever they want at that level.

I think that it's nice that we have a lot of different verticals to work in, and hopefully, we're the best in the world at what we do. I'm perfectly satisfied being the best in the world at what we do, because I freaking love what we do, and it just makes me really happy, and I think it makes a lot of the people that are on our team really enjoy it.

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