Hello, friends,

Welcome to the University of Nicosia. Welcome to the Open Metaverse.

I'm George Giaglis and it's a real honor and a pleasure to welcome you all here today.

I'm really excited to see hundreds of people from all over the world joining us. This is

a truly historic day as we all come together for the first live session of the world's

first-ever university-level course that will take place entirely on-chain and in the metaverse.

I couldn't be prouder to have with me as a co-instructor in the 12-week journey that we start today, Punk 6529, who is undoubtedly the world's leading authority and a visionary thinker in the field of NFTs, the Open Metaverse, and the future of our decentralized world. I am so proud to count him among my mentors. I would also like to take this opportunity to thank the more than 50 investors, artists, collectors, entrepreneurs, and thinkers that have kindly agreed to share their unique insights into NFTs and the metaverse with us over the next weeks.

I cannot honestly think of any university course ever that has had such an impressive lineup of invited speakers and I'm sure that I will be learning from them as much as everyone else here today. Special thanks also to my amazing team at UNIC who are constantly breaking new ground and always give their very best to support our students and the educational experience that we'll be having over the coming weeks. And last but not least, a big thanks to Ryan, Mungi, and the whole team at Oncyber for making all this possible and for working around the clock with 6529 and the UNIC team to create an awesome metaverse experience for everyone.

Right, so before we begin with session one, let me bring up our presentation to take you quickly through the logistics of the course. So, as you know, the course will be running for 12 weeks. Each week there will be a presentation like the one that you are looking at now. This will include further reading material for those of you interested in it. We will also have a live session like the one we're having today and we will have to start week one or more additional guest lecturers or interviews or panels. All material, including this live session, will be recorded.

Everything will be available to watch on demand for those of you that cannot attend live either for due to time zone constraints or some other reason. At the end of the course, there will be an assessment. The assessment will be different for those of you that are already students at the University of Nicosia and want to take academic credit from this course. You will have to do to take a qualitative assessment. Everybody else who simply wants to receive an NFT in the form of a professional certificate issued by the University of Nicosia will have to pass an online multiple-choice test with a score of 60% or more.

As I've said, the course is being led by Punk 6529 and I'm going to be helping him whenever I can, but obviously, such an experimental new course couldn't have been possible without the help of many people from our team, both at the University

of Nicosia and from the team of 6529. In this slide, you can see the members of the team

that are the main contacts for this course. We have introduced them in the pre-course last week. You can find their Twitter, Handle and Discord usernames for all of them, so please refer to this slide and talk to them either in Discord or on Twitter for anything that you need relating to this course. All of them are with you today in the home and are monitoring the chat, so they will be taking on questions that they can as we go along.

Let me say a few words about the University of Nicosia because I'm sure judging from the multitude of countries where everybody's coming from, many of you might not know us. We are the largest English-speaking university in Southern Europe. We are a comprehensive university. We have more than 14,500 students across more than 100

degree undergraduate and postgraduate programs. We are ranked top 3% globally and among the top 200 to 250 universities in the European Union. We are one of only 50 universities in the world that have received five stars in the QS assessment about our online teaching. Our campus in Nicosia consists of more than 20 different buildings, among them probably the world's most beautiful and iconic student accommodation ever.

But apart from the people that we have on-site at the university, we are very active online and we are particularly active in the field of crypto. We have always been global pioneers in this space. We were the first university in the world to accept Bitcoin for tuition payments. We were the first to launch a course in crypto, our free MOOC, the introduction to digital currencies taught by Andreas Antonopoulos, Antonis Polemitis, and myself has been continuously running since 2013. It was the first course ever

in the world and we are proud to have trained more than 80,000 students from more than 120 countries until today.

We were the first to offer a full academic degree in this area. Our master's in blockchain and digital currency started in 2014 and is still the world's largest program in crypto. We were the first university ever to issue our certificates as blockchain-verifiable credentials. We started in 2015 with our MOOC alumni. Then in 2017, we moved to issue all the degrees that are awarded by the University of Nicosia. They are now awarded on the issued on the blockchain. Last year we started issuing certificates also in the form of NFTs on the Ethereum blockchain. We have the largest dedicated crypto team in academia globally, in our Institute for the Future. We do basic and applied research working with many crypto projects as well as institutional partners like the European Commission or the European Central Bank.

We aspire to become the first university in the metaverse having launched this course today in partnership with Punk 6529 and hopefully, we will be aiming for a new full academic degree in metaverse systems next year. Now having said that trying to be first at something is always a challenging endeavor so this course and the whole learning experience is going to be a big bet for us and I think it's going to be a learning experience for everybody. We've frequently said that this is the first university course to be held on chain and in the metaverse. Let me take a second to explain what we mean.

By on chain we mean that our internal bet is to try to do as much as possible in this

course without touching upon any centralized information system of the university. That's why we did not ask you to register in a web page and give us your full name and contact details and email or whatever. We asked you to mint an NFT on the Ethereum blockchain and this NFT will become your ticket to access the class. We aim to have all material available in the form of NFTs so everything will be air-dropped to your wallets those of you that have minted the course access token I would encourage you to transfer that token to a separate wallet that you control because on that wallet will be air-dropping a number of things including this presentation, interviews, panels, discussions, everything that we're going to be doing in this course.

By the end of this course you will have a full portfolio of material inside your Ethereum

wallet. That's what on chain means and in the metaverse obviously means that we're going to be using the OM to do that. Today we are using the open space of OM. We are here in this beautiful park but starting in the coming weeks we will be gradually revealing parts of the metacampus that we are building in the OM. We're going to be holding future activities in auditoriums, in special learning facilities, we're going to have exhibition rooms, we're going to experiment with many modalities within the metaverse and we would like to have you with us in this journey.

We expect to have some hiccups in the beginning of the course and probably even later as we're constantly breaking new ground. Please get back to us, tell us what you think, what works well for you, what doesn't work well for you. If you have any feedback or ideas or you would like to help us in making this experience better for everyone we are open to your suggestions on Discord, on Twitter and in the chat here.

A quick technical tip for those of you that are connected through mobile you will make most of your experience if you connect through a desktop environment and if you connect through a laptop please make sure that you set it up so that your browser uses your dedicated graphics card if you have one to render the world that you are seeing

in the OM. Many laptops would by default use their internal graphics card and you might have a lesser experience.

Having said that because we have hundreds of people we have made the design

choice today to create separate rooms. Each room consists of around 300 people so that we do not have hundreds and hundreds of people in the same space to avoid any performance issues. In the future, as we become more comfortable with the performance of the world and the environment we will be bringing more and more people in the same instance as well.

I'm saying that because as we go along and especially in the Q&A session some of you might hear either 6529 or me talking about a question in the chat that you might have not seen in the chat and will be wondering what's happened. The reason is that there are separate chats in each of the rooms so each group of 300 people or less are looking at a different chat and we are combining everything together in our current.

Another thing that I would like to stress is that everything that you see in this

course coming from the University of Nicosia is released under a Creative Commons Attribution License which means that you are totally free to reuse the presentation materials and everything else that we produce in this course as long as you attribute it back to the University of Nicosia. So you can take these slides use them as they are or modify them so long as you attribute that the source was the University of Nicosia in this course. Obviously, this release has to do only with intellectual property that comes from UNIC and not intellectual property from other parties.

All the presentations will be available on our Github and all the presentations will be minted as NFTs and air-dropped to your wallets.

Obviously, this is an educational course only. We will be discussing various projects, various people, and various NFTs. None of this is investment advice. None of this is a recommendation to either buy or sell an NFT. I hope that this is clear to everyone but I had to set it. If you are new to crypto, note that we are at the frontier of investment classes here and any investments at all at Island should be made only after careful

research and probably after consulting a professional advisor.

As you have seen on the website, we have a 12-week schedule ahead of us. We are in the first week now so we're just going to be laying the ground, the background, and making sure that everyone is on the same page about what is an NFT and why all these things are important. Each week we're going to be dealing with a specific subject either on NFTs until week seven or related to the metaverse from week eight onwards.

That was it in terms of the logistics of the course and let's go to session one.

Session one is a challenging session in the sense that we have a very diverse group of

students obviously. There have been more than 20,000 people that have minted the course access NFT and we're super happy about that but obviously, some of you are very new to this area and some others are at the other end of the spectrum. You might already be developing or collecting NFTs and hence you know much of the background information.

The goal for today is just to create a common language about NFTs with everyone. Some of you will find today's presentation very straightforward or even simplistic. Others might find it very difficult. The presentation will consist of two parts. I will start with a brief technical overview to define NFTs and discuss some of the standards for NFTs on the Ethereum blockchain and then I'm going to hand over to 6529 who will take us through the different types of NFTs, their use cases, examples of interesting collections and explore the market size and structure for NFTs.

Let me start with a technical discussion. I'm going to try to keep it as simple as possible and not go through everything that you see in the slides. You can read them on your own time. First of all, I hope it's clear to everyone that NFTs live exist on blockchains. If you are not familiar with the concept of a blockchain, a distributed network of computers processing transactions in a peer-to-peer manner, grouping them into blocks and appending them into a chain, then I would suggest that you follow our introduction to digital currencies MOOC, the link to which you can find at the bottom of this slide.

NFTs live on blockchains and so we could be spending time here discussing the different types of blockchains, but we decided to keep things simple to just base the discussion on one of them, the Ethereum blockchain. I'd like to start by discussing what Ethereum is. Ethereum is what we could call a second-generation blockchain that is capable of running applications. I'm using the term second-generation to differentiate it from

Bitcoin, which everybody considers as the prime example of the first-generation blockchain.

Bitcoin is an open public and permissionless network of computers. This means that anyone can join just by downloading some software and connecting to the network, but Bitcoin is single-use. The only thing that the Bitcoin blockchain is doing is effectively processing the Bitcoin token, so the blockchain and the token have the same name.

Ethereum is a second-generation blockchain network that is similar to and very different from Bitcoin at the same time. It's similar because it's also an open permissionless public blockchain and also has its own token. It's called Ether. Many people call the token Ethereum as well, but technically Ethereum is the blockchain and Ether is the token.

However, unlike Bitcoin, this is a blockchain in which we can program and run

applications. Very simplistically, you can think of Ethereum as the Internet of decentralized applications, a global network of computers that can run any application without the need for intermediaries. You can have the functionality of Facebook without having Facebook, the company mediating the transactions. You can have e-commerce without Amazon or some other provider, and this is what is most revolutionary about these types of blockchains.

How is this possible? It's possible because Ethereum and other similar blockchains run what we call smart contracts, and smart contracts are computer programs that run on the blockchain and are immutable. Immutable means that they cannot change, and this is a very powerful characteristic. I cannot overstate the importance of this characteristic. We have programs that once we hit run and we deploy on the Ethereum blockchain, cannot be stopped or modified or anything even by their owner.

Technically, the owner can keep them in a state that is changeable, but I hope you will forgive the simplicity here. The promise of having such immutable code running on a blockchain is nothing short of revolutionary because now, for the first time in history, we have the ability to program any interaction between parties that is automatable, program it in a smart contract, and be trusted to run as programmed without intermediaries and without censorship, without anyone being able to stop it. This opens up the possibility of all sorts of applications.

The other difference of Ethereum is that it is a multi-token network. As I've said,

it has its own native currency, Ether, but on Ethereum, we can also create additional tokens. Some of these tokens are fungible and they follow a standard that we call ERC20,

and others are non-fungible or NFTs, and they follow different standards like ERC721 or ERC1155.

Fungibility is a property that has to do with whether different units of some asset are exchangeable or not. When we say that a token is fungible, we mean that any two units of that token have the same value. If you have one Ether and I have one Ether, this Ether, in theory, should have the same dollar value, but non-fungible tokens are unique. They are different from each other. If you have a CryptoPunk and I have a CryptoPunk, the value of our Punks is generally not the same because each token has its own properties, so some of them might be more valuable than others.

As I've said, there are three major standards in Ethereum governing token creation.

One of them is outside the scope of this course. ERC20 is the most popular

standard and it deals with fungible tokens. The other two, ERC721 and ERC11155 were both released in 2018 and they both deal with NFTs. ERC721 is the most widely used standard for NFTs today. ERC11155 is a more complex version that allows us to create smart contracts that manage multiple token types at the same time. These tokens could be fungible, non-fungible, or hybrid. ERC20 is, as I've said, outside the scope of this course, so tokens like Uniswap, Sushi, Tether, USDC, Manna, or Tether that you see in this slide basically deal with various types of financial applications, so we're not going to be dealing with them.

If you are interested in fungible tokens, then we've got you covered. We have another MOOC that I'm also teaching with a group of colleagues from the University of Nicosia on decentralized finance. You can access this at the link that you see at the bottom of this page and it's a totally free course.

What we are going to be dealing with are the standards that are used to implement

non-fungible tokens. The simplest of them is ERC721. It provides basic standard functionality that developers need in order to manage, track, and transfer NFTs on the Ethereum blockchain. Technically, you would need to write computer codes in a smart contract programming language like Solidity to do that, but in practice, most creators today would use some third-party service that would allow them to create their collections without writing code or with very little programming involved.

ERC1155 is Ethereum's multi-token standard. If you see the first three bullets in

this slide, they provide the basic difference between the main standards. If I wanted to create an ERC20 token, a fungible token, I would create a different smart contract for each token. So, Tether has its own smart contract and Uniswap has a totally different smart contract for the Unit token. ERC721 allows me to have different tokens in a single contract. So, I have punk6529 and punk6530, which are different tokens but are managed within the same contract with different metadata, and different attributes for each of the tokens. But all the attributes are defined at the smart contract level. So, whether my crypto punk is male or female or alien or an ape is defined in an attribute in the smart contract.

And ERC1155 takes this idea of being able to create metadata and attributes for your tokens, not at the collection level, but at the level of the individual token, at the token ID. And this is something that is very important when you want to create more complex applications, for example, in gaming. We'll discuss gaming later in this course, so I'm not going to go into details.

This is a table that summarizes the differences between the two main standards for NFTs on Ethereum. Now, and I will finish with this, if I wanted for you to take one thing away from today's lecture, the technical part of it at least, is this slide. Many people, even people that are quite knowledgeable in NFTs, have a very fuzzy idea or have never thought about how, and where are their NFTs really stored. And what I would like

to emphasize here is that in most cases, storing big data on the blockchain is very expensive.

So, if I created a collection of 10,000 images that each of them, you know, is a few megabytes worth of information, it would be very, very expensive to store the images themselves and transact with the images on the blockchain. So, instead, the token that you own, when you own an NFT token, like the course access token that you minted here, effectively you own a pointer to a URI, a Uniform Resource Identifier, like a web page link, that points to where the actual image or the actual content of the NFT, because it might not be an image, it might not be a video, it might be this live session, is actually stored.

And when dealing with storage, we have two options. We can either store our NFTs in a centralized server or we can store them in a decentralized way. And what usually happens is that in the NFT field, if we have to choose between centralized and

decentralized types of storage, always decentralized is better. So, two examples of

different philosophies that do the same thing, distributed storage of NFTs, are IPFS and RWEV.

RWEV is the standard that we are using in this course, but IPFS is equally good and they both provide ways in which the actual image and its metadata for your NFTs are not stored in a single central location, but are shared by thousands of computers worldwide so that you have additional security that nobody can mess with your NFT unless the whole network goes down.

Now, in some rare cases, we might even see NFTs that are stored natively on chain and this means that the actual image and its metadata are stored on the blockchain. This is obviously the best-case scenario. It preserves all the first-order features of the blockchain, so you have really immutable, decentralized NFTs with no single point of failure and all the other attributes that those of you familiar with blockchains will know about, but they tend to be very expensive, as I've said, so you would see them only when you can somehow compress the data.

For example, in generative art, as we will be discussing in a couple of weeks from now, this is a decent choice to store your NFTs natively on the chain. If you have one-of-one or photography or videography or anything else that creates large files, this is probably not feasible. So what I want you to remember again is that when you own an NFT, effectively you own a token that is a pointer to some location in which the actual file is saved and whether this is on-chain, off-chain decentralized or off-chain centralized matters a lot, this is going to be a big theme in this course.

Okay, so this concludes the technical primer and I'm going to be

handing it over to the man that you've been waiting for. Punk 6529 is with us and I'm going to give the floor to him to discuss what our NFTs are. So 6529, if you can hear us.

Okay, fantastic. Well, first of all, I want to do my own round of thank yous to

everyone who has brought us to this point. First of all, George and his team, the OnCyber team, the team at 6529, and the broader team at the University of Nicosia that has helped even folks who are not in the blockchain area have been helping. The audiovisual team is helping us here today and of course all the incredible guests, lecturers, and panelists that are going to be joining during these next 12 weeks. So thank you. This is a group effort. It's a team effort and the overall experience is going to be not just a group and team effort among the people who are working on this course but also with the students.

One of the things we are trying to understand here, one of my deep interests in trying to understand, is in fact what we can do on-chain and in the metaverse. My general perspective is that we have been a little bit intellectually lazy in the crypto world about how much we can actually use decentralized systems. The vast majority of people

use cryptocurrency for realistically financial speculation and sometimes things like transactions.

Part of what got me very excited about NFTs in addition to seeing great art and wonderful artists was that the NFT world in great contrast to the fungible token world was spending a lot of time on chain and was doing new functions on the chain. Last week we were minting QQLs at 6529. That was fun and it was an activity that I don't remember doing three or four years ago in cryptocurrency I believe for cryptocurrency to make it, for decentralized walkchains to make it, we have to have real-life usage cases that are something more than we're going to hold on to these tokens and the number is going to go up.

I've mentioned this before on Twitter, I learned by doing things, and yes I'm going to be sharing some material I think the students will learn some things from the material that I will share but I also hope to learn from this course, and specifically what I want to learn is what does it mean to have a large group of people engage in you know broadly a course and do it without using a centralized database. What does it mean if we're doing a class in the metaverse but more importantly what does it mean if we're going to run a community focused on learning about NFTs or working in the NFT space or thinking of new ideas in the NFC space and what does that mean in a persistent three-dimensional environment.

While I think today's experience is super interesting and I've been enjoying watching it and watching George lurking in the background in one of the rooms I think the more interesting thing over the course of the next few months is what we are all as a group going to do outside the classroom.

I think there will be an exercise iterative exercise of seeing what people want to do

trying to build these spaces that enable them to do it. George mentioned the campus is being built and the OM teams doing a lot of support there one of the reasons the campus is not ready is just because it's not ready but the other reason that it's not ready is we want to take a design iterative design approach there and launch a certain set of spaces see how we use them to see what other needs we have to see what spaces are needed to support those needs and what would be a great success for me at the end of the year is not only that we've had some nice panels and lectures but there are groups of people who have met in this course have become a part of this community and are planning all types of interesting things to do together so that we can find people to

also, educate in parallel with this course.

We stopped at 50-ish lectures because the logistics were starting to get out of hand but there are a lot more people who want to contribute and part of what we're trying to figure out once we get past these first couple of weeks is how to let them contribute in parallel with the course. I noticed this when I was working on my set of slides. These slides if you're deep into the crypto space today's are the NFT space and you have a crypto background today's session is super easy but I was trying to think if we're trying to onboard someone new here someone who is excited about the NFT world or the metaverse world but does not have a deep understanding of crypto well we are trying to cover everything from Bitcoin to Ethereum to smart contracts to where do you store an NFT to what is the market cap of the space what are the subsections of space in a few slides it's not possible and so what I'd like to get to is parallel tracks people doing not every single person has to come to every session but that over the next few weeks we have a campus an educational area where people are learning all the time there's a no bigger barrier to our development and education there's never a limit on how much

we can learn.

I've been in the space for a very long time and I learn new things literally every day and there are people at different levels of development and they're going to learn things every day as well and so we're trying to enable something like a university of old right where you went there and you're learning you're living there and you are aiming to learn from your colleagues and those students and the faculty and the visitors but

with the great benefit that we can do it globally for the whole world at the same time and so this is the spirit of this course and this means that we're going to need your feedback for sure your help for sure and your initiatives for sure to figure out how to do all these things and figure out what are the things you want to do and so where you know reach out on Twitter on Discord feel free to organize things.

I think in two to three weeks once we have the basics working we're going to be very open to people coming and saying hey I want to do a special lecture specifically on the details of how IPFS works and we will say yes the answer is going to be yes the answer is let's do more let's find a way for everyone to be able to share the knowledge that they have and for people to learn that knowledge. So this is my view of let's say the

course philosophy now in this and the time that I have today I'd like to do one and a half things.

What I really want to focus on is my big-picture conceptual idea of what NFTs are

conceptual the rest of my slides are things like well what are the sectors of the NFT space PFPs or generative art, 1/1. We're going to fly through this. Fly through those today because for each of those areas we have a session later in the course so I'm not going to spend almost any time on PFPs today because we have a whole session in two weeks on PFPs and we'll dig into the micro details there so I'm going to focus on the first set of my slides and see if we can get some big picture ideas communicated with that’s a great lead.

I see NFTs it is the most absurdly trivially simple idea literally, the only thing an NFT actually is is a token with a number. They are enumerated tokens. They are tokens where you can identify one token and it is different from another token. This sounds I mean if you think about it at this most basic level and if you think about if this is important it sounds very unimportant. I'm trying to imagine if this was several years ago and someone told me oh this is a really important idea you know what's the idea

we're going to have tokens and we're going to put numbers on them.

I'm pretty sure okay well that doesn't sound very important why is that important okay cool I guess right what we're seeing here on the slide are the three six sequential tokens that on the crypto punks contract that includes 6529 so in my theorem wallet is punk 65 crypto punk tokens 6529 and there's also 6528 and there's a 6530 that's all NFTs are and it's weird because it's one of those that is deceptively simple because it actually enables a huge number of things - let's go to the next slide.

Because the other part of NFTs you will not find on a blockchain the other important part of NFTs is a social convention. People who don't understand NFTs well often make criticisms of the following genre but NFTs are just a receipt they're just a pointer they're not the thing. They're the thing that points to the thing George earlier pointed out that in most NFTs the actual image is not on the blockchain it's somewhere else it's on IPFS for example and people say it as if this is some type of big cache and that's because people haven't spent any time thinking how any advanced society works and every single advanced society works. Primarily by manipulating pointers not underlying objects

I have a big tweet storm about real estate and people say oh you know real estate is a super tangible thing when you very different than NFTs you own a house you own a piece of land you own an office building but when you own a piece of land what does it actually mean.

What it actually means is that the land registry office for your jurisdiction there is a title deed and that title deed says plot 123456 is owned by Mike Smith and if Mike Smith wants to sell it to George they're going to go to the title office and maybe some other places and maybe their lawyers will put some documents together and they'll sign all these documents and the pointers will change hands nothing is actually going to happen on the land itself right the land is just going to be sitting there the land doesn't have the slightest idea the land's been there for billions of years right. That's the slightest idea that there are some overgrown monkeys us who are trading pieces of paper or in modern times entries in a database and saying this land is my land this land is your land.

We've now changed who's landed as the land's just there very much off-chain hanging out but Mike Smith and George are trading a pointer to the land and when that pointer moves we all collectively pretend that George owns the land just like we all collectively pretended that previously that Mike owned the land this is the part where someone says, yeah but the reason that works is society is willing to enforce it like if George now owns the land and Mike won't get out. George can call the police and yeah that's just because society is respecting that social convention it's just a social convention it didn't exist at some point at some point hundreds or thousands of years ago.

It's one of these stories that other if it's actually true that people say about when the Europeans came to North America the Native Americans were there they didn't really have this concept of land ownership and they thought the Europeans were kind of nuts quite saying like oh I owned this river and I owned this mountain I don't know if it's actually true or if it's one of those things you learn in elementary school but in any case that is in fact how it is it's just an imaginary the social convention we have decided that the way to organize land ownership is by trading these pieces of paper.

Well that is exactly what NFTs are we have decided and today the people who care

about the social convention are maybe a million people or half a million people or two million people but that number was going to grow every single year. We have decided that a token and if that token is in your wallet it is a pointer to something else and we're going to attribute ownership to something else to the person who has that token it is also why the right click save as argument is so very silly if you're deeply crypto native, someone, of course, can go right click save 6529 right now.

In fact when I first started tweeting a lot of people would do it to me all the time. They'd come and say oh ha ha ha I've right-click saved your punk and now I'm

going to use it. Okay have fun I mean. You can use it but the reality is we all know that the crypto punk token 6529 is in my wallet not in your wallet and if you want a market assessment of how strong the social convention is. The market assessment will pay exactly zero dollars for your downloaded jpeg but would pay hundreds of thousands of dollars for the token.

That's the social convention at work that's why if you go just stand on someone's land you don't become an odor of it you have to go buy the title deed right you have to go through the social convention.

And let's go to the next slide, please. How do I see this where does this fit into the history of crypto assets? It is all exactly the same idea as when we started with

bitcoin. Bitcoin is this concept for money currency you can argue which one of those two it is is some type of commodity one of those things and what we have said in the bitcoin world is if you own these certain outputs in your wallet you can that means something and the amount of eye-rolling that was happening a decade ago when bitcoin people would say that was gigantic.

There's no question this means anything at all. Why does this matter right now it has been established? That it matters and this doesn’t anything changes bitcoin's worth two thousand dollars, twenty thousand dollars, two hundred thousand dollars. It's clearly worth something people have clearly subscribed value and monetary-like value to bitcoin then the ERC20 tokens that George mentioned earlier are more or less the same point but for financial instruments. Now you say well what do you mean - are they financial instruments are they securities are they not securities?

There's a lot of dancing around on this topic because of the US regulations against secure against unregistered securities so some ERC20 tokens look very much like financial instruments some go through a variety of convoluted ideas to not look like financial instruments but basically, that's what they are right and some of them might be a security under the US definition some of them are not a security under the US definition but what they are aiming to replicate is arbitrary financial

instruments so if bitcoin or maybe ETHER but you know the popular perception of Bitcoin is the underlying currency.

Well an ERC20 token is something like a stock a bond a derivative. Some weird new financial instruments that don't have great analogs in the fiat world but things

whose nature is primarily financial and they are fungible and that's how financial instruments work right. That's how financial instruments work in the real world. They are all fungible

and they're traded around primarily for financial reasons and if you see how ERC20 tokens work. That's the context of their environment with this in mind we go to ERC721 switches or 1155s, in any case, the NFT protocols this is the same concept for quite literally in my view.

Everything else in the world and it's interesting because everything else in the world is actually a lot of things in a very big number. Most things in the world are nonfungible. There's a huge amount of value embedded in fungible instruments in the world a huge and possibly well certainly hundreds of trillions of dollars but there are even hundreds of trillions of dollars embedded in nonfungible objects and with that let's go to the next slide.

This is my highest-level view of what NFTs are what NFTs can be and how NFTs can develop over the next decade and the first thing to see here is that split on the top. Between natively digital intangible assets and physical or tangible assets where we're

making an abstract pointer to them. NFTs will first develop in the intangible natively digital category. The reason that is is that the blockchain world the online world the interoperable with Blockchain.

The world does not need anything from the regulatory system from the government from the enforcement mechanisms of the state in order to make the first part work. So if like uh I do on occasion we meant a meme card and there's I don't know 420 tokens and we assert that that meme card each one of those tokens represents an addition of one out of 420 of this piece of art and we the artists the issuer are going to treat them as such. Well, that's it but I don't need any other assistance from the state to do that.

I can see where those tokens are I can interact with those tokens permissionlessly I can say if you have one of these tokens you can come into this token gated

space in um if a person who does not currently have one of these tokens asks me how can I buy one of the additions from this artist in the meme cards. I can just point him to the meme cards contract and say well buy one of these tokens. And then they can buy it on a permissionless exchange. I never need to call the courts I never need to call the police I never need to use the enforcement mechanism of the state that is required for physical goods because the wonderful thing with cryptocurrency is much easier to play defense than it is in the real world.

In the real world if I was if there was no state and I had a piece of land and I’m just a normal type of guy. Maybe someone who has more muscles or more guns or more friends says well I don't care about the silly little title you have I’m moving in and you're moving out in absence of a state. The mechanism it's actually quite hard to prevent them. You know if you did this with a normal developed state. You're going to call the police and the courts and someone will help get you your

property back. But in absence of that, you'll probably lose it with the encryption embedded in crypto assets with the model embedded in crypto assets playing defense does not require any help. You can just have the token in your wallet and nobody can take it to you by force at a first approximation and yeah there's hacking and things like that but at a first approximation nobody can take it by force.

So what this means is: anything that can be digitally linked to an NFT can start developing now. The regulatory state the normal society is slow on innovation. They'll eventually get there but it might take five years 10 years, or 15 years, fortunately. We don't need to wait for Washington or Brussels to make a decision in order to put an intangible asset like the police of art on an NFT.

So in this bucket what do I say? Well NFTs started with what weren't something like collectibles or things that straddled the line between collectibles and art. They have gone very strongly into the art space as well. So collectibles and art are the majority of the market today.

What most people expect is going to come in the next phase is greater usage of gaming assets in metaverse assets, buildings, lands, trees things of that nature. What will come after that is more real-world intellectual property right well intellectual property that might not be directly linked to a visual on an NFT brand's cultural society all of these types of intangible assets can come on board now. There's no technical challenge stopping it there's no regulatory framework that is needed.

All you need is education onboarding and you might say, well okay, I mean that stuff sounds small. It is not small at all intangible assets there is a very large report and in fact George we should add it to the reading and maybe next week that every year counts the number of intangible assets on corporate balance sheets and it's over 75 trillion dollars and that doesn't even capture intangible assets that are not on the balance sheet you know the American flag the statute of liberty the land of the free and the home of the brain that's an intangible asset but you're not going to find it written down on a financial statement somewhere but it certainly makes the US more valuable than if it didn't have this type of branding.

So we are looking already at the existing stock of intangibles that's larger than the money supply and there's no obvious barrier to me for some of that migrating on chain this is kind of bucket one bucket two which is my

The mission for being at six five two nine's mission for being. We'll cover this in later

sessions in more detail I believe NFTs can be the underlying database for an open metaverse but I don't want to get into that today.

That's a long story we'll pick that up towards the end of the course then at some point we will start migrating non-fungible physical world assets and services to NFTS and these are all the examples that people talk about now. But nobody

does because it's going to take time, oh I can buy a house by buying an NFT. I can rent a holiday villa by buying an NFT for these certain dates I can rent a digital billboard in times square for these hours by buying an NFT and what it means. Once this happens you can move all of these interactions out of a bunch of fragmented proprietary databases which is where they are now.

If you want to book a night at the midtown Hilton on 6th avenue you have to call Hilton

which nights are available are in the Hilton database and these things are going to end up a decade from now in the Opensea of that which might be open here might be someone else so I want to go to the Hilton let me see what the floor is for Hilton upper room prices on these days on the sixth avenue for these things to happen you'll need some more let's call it enforcement counterparty regulatory certainty. Now you have the token you show up and say: hey this house is mine and someone says no it's not. Well we're back to the physical world issues the mechanism by which you bought the house has to be recognized by the state so you can say look Mike you've

got to leave the house. I have the token I can prove to a court that I have the token and

you're going to get evicted so I see these coming closer to the end of the decade.

Both will happen and when both happen. You're discussing an addressable market of several hundred trillion dollars but the natively visual ones will happen first. Let's go to the next slide.

I think this one is straightforward I put it here in case anyone you know if it was helpful after the prior slides but this is in fact the kind of two by two matrix that fits here. There are things that are tangible and intangible right? So commodities, oil, wheat, etc is tangible and fungible a bushel of wheat is a bushel of wheat at a first approximation.

There are things that are tangible and nonfungible. My house is different from your house. My painting on my wall is different from your painting on your wall. There might be things that are semi-fungible right? My Nike sneakers are different from a lot of Nike sneakers but similar to some Nike sneakers and well it's a joke but it's not a joke I mean us right all of us are tangible nonfungible objects towards is different from me and we're very much tangible and then on the intangible side the intangible fungibles are the ones who said before money and financial instruments these are where we see the l1 the tokens of the major blockchains and the ERC 20 tokens or their equivalent that right above them and then tangibles and non fungible intangible non fungibles are culture society a lot of services are intangible digital goods obviously like the ones we've been describing a lot of intellectual

property and so fungible tokens will work on the first row here non fungible tokens will work on the second row short of public blockchains public cryptocurrencies getting banned by the regulators which spends a lot of time and effort to make sure that does not happen all of this is going to happen over the course of a decade and all of it is going to be actively good for society. There's no reason they'll be actively good for society in the same way that the internet was better than filing cabinets or a bunch of independent content management systems where the internet gave you a unified platform a single standards-based interoperable way to transmit information crypto assets give us a uniform interoperable public commons to trade things of value whether they're fungible or nonfungible.

So let me see which is the next. The slide is one more high-level model and people who follow me on Twitter hear me talking all the time about memes and how we need to seize the memes or how memes are the most important thing in the world and I think some people think I’m joking but I’m actually not joking at all.

There's a great book called Sapiens by Yuval Harari which talks about myth. How society works with myths or stories. If you prefer or if you prefer if you're a sociologist inter-subjective realities and objective things are things like the computer. I’m speaking to and the microphone I’m speaking to objectively they're here subjective things are kind of nontangible things that I feel right. I feel happy right now. I’m telling you that I feel happy but I, you know.

There's really no way for you to see it or feel it intersubjective things are imaginary things. We believe together so imaginary things. We believe together that Nike is a good brand but just doing it makes us feel happy just doing it makes us want to buy a pair of shoes for more money than you would have otherwise but wearing shoes with a swoosh on them might make you more likely to jump higher or further or faster so these intersubjective myths are basically not different from the memes they're basically not and you can say okay well that's fine but that's not the important stuff. The important stuff is trucks and guns and oil and physical resources and cash flows and investment bankers and I disagree all of those things are downstream from memes and myths.

Nike has a lot of revenue and a lot of factories and a lot of distribution but the reason it has all these things is that people believe in the solution. Just do it and the

a general brand that has been built and if that brand didn't exist those would be less important and less successful it's easy to see at a national level people are willing to

unfortunately, die for national memes and myths and that might be good, it might be bad, it might be bad, it might be noble, it might not be but it's clearly the case that people are going to know.

If you're very good medically if you're Obama and you say yes we can and you repeat it thousands of times or if you're Donald Trump and you say make America great again and you repeat it thousands of times and your meme your myth, that yes, we can all do it together with solidarity or that America’s on the decline.

But if we change how we operate it will be ascendant again these are intersubjective myths their memes right that red hats make America red hats a meme if you're very good at memes the population of the United States will reward you by making you the most powerful person in the world who can direct trillions of dollars of economic resources and give you the power to end human life on earth and yes armies are an important tangible thing they're not a meme but who gives instructions to the army is the person who's good at memes that's how you get elected and. I think in the last 16 years of us politics if anyone previously had delusions that the reason you get elected is that you write very good policy papers um that should be over now right though.

Well you get elected is by getting people to feel a certain way to organize a certain way to believe in a common reality a common intersubjective reality a myth a meme and then human behavior organizes downstream from that long-winded way of saying NFTs can be a very important socially as well because they give us direct access to the underlying meme.

I don't think this has even played out one percent what am I about to say

if you are Nike and you are now the holder of a powerful myth you have to go through an extremely complicated set of activities designing shoes hiring athletes

who are putting them on TV running factories in Vietnam shipping shoes across the ocean, shipping shoes across the country, having retail employees sell them to you accountants, lawyers, taxes money and bank accounts, financial statements, shareholder resolutions and you pay a dividend at the end you monetize that? With a vastly complicated set of activities, you take the meme that is intangible you make it tangible through a huge amount of human effort and billions of dollars of dividends got there.

Here we can short circuit here we can hold the intellectual property directly to the meme. Directly I say. Well, why does it matter what can you do with it? I think we're

figuring that out.

I don't think it's actually this is not something where I can say on the next five slides. I’m going to tell you what you can do when you see the meme. Now we're figuring that part out along the way and I believe this gives us the opportunity to change society for the better. When people say well I’m not happy with this societal system or I’m not happy with that societal system. Well societies are just made out of people right voters are just the people you go to work with or go for drinks with or hang out with or I don't know go to sports games with those are the fellow voters everyone believes in memes everyone believes in myths and when you change a medium you know the medium is the message. Every time there's a shift in medium there's an opportunity for new messages to emerge and perhaps we have an opportunity for more pro-social messages to emerge for messages that are more decentralized in nature that a society that gives more trust to people and spreads power more diffuser.

I think there is that level of opportunity it's not easy the opposite could also happen right NFTs are politically neutral someone could use them to very effectively promote memes that are against perhaps the values the crypto community believes in so they're politically neutral like every other technology. But I think we will see a different way of organizing human activity just like tv organized human activity in a different way right TV was a centralized force in American culture all of a sudden once broad network TV crossed across the country at the same time at the same hour across the gigantic country all people could watch the same show or listen to the same news anchor and

that formed a form of certain social construction.

Now we have the ability to form social construction in the natively digital environment that we live in and without the centralization that has happened with social media companies but it's not a sure thing this part's not a sure thing this part we have to work for this part we have to figure out how to do it but I have a very very gut sense that it is possible. I think this is it on my high-concept slides and hopefully, this was comprehensible. Can we see the next slide, please?

Yeah I’m going to run through the rest of these slides quickly because I think for some of you these are over basic and in any case we're going to cover this in much more detail in future sessions.

Early NFT collections did have a collectible slash gaming flavor and you know. Now there's a big debate you know our punk's art or the collectibles or Pepe’s art and the collectibles certainly have some collectible-type characteristics right even if they're art. They certainly have collectible-type characteristics and this is where the space started next slide, please.

PFPs are by far the largest market category today we'll talk about that in a couple of weeks, next slide.

Of the more art-oriented NFTs - generative art - has found its natural medium on chain.

We'll have a whole session on generative art. It's probably my favorite area of

NFTs and I’m very much looking forward to that. We have some of the greatest

generative artists in the world join us to talk about generative art. Next slide.

One-of-one art is really interesting. It's such a token-based term right? It's because lot of other tokens that are not one of one but one-of-one art in the world at large are just called art by a painting not an addition but one-of-one art is not one type of thing. It's many types of things again we have some great artists joining. There we'll talk about that in five weeks. I think, the next slide.

Gaming NFTs metaverse oriented NFTs. This is not to say that we don't have these now. We do but these are areas where people believe that there's going to be tremendous growth and there's going to be tremendous growth in the coming years. If you notice venture capital firms like Entree and Horowitz are funding an endless number of gaming studios to build blockchain-centric gaming companies. So I suspect we'll see a lot of development over the next few years here and learn a lot more than we know today. Next slide.

Utility-based NFTs are also an area that has not just a ton of potential but

almost completely unexplored. The most famous one is ENS the Ethereum Name Service which is in some ways one of the most successful NFTs collections. The domains are NFTs and it is a blockchain-based domain service where the domain itself is an NFT it's fabulously smart it's super successful but you know the mint pass that you will use to attend this course that's also a utility-based NFT there's a nice piece of art associated with it but the primary use of it is to be able to enter the core spaces to be able to mint your certificate at the end there's a lot of potential utility-based NFTs that we mostly have not yet fully explored.

Next, this is the back end of my prior chart when we start representing real-world objects on the chain as I said for big important objects like real estate we need regulatory bridges or some type of enforcement bridges for people to feel comfortable.

What you're saying now is super interesting experimentation this is a project by Gmoney where you mint an NFT that NFT represents apparently an extremely fancy t-shirt. I understand you can actually take possession of your t-shirt or they can store it for you. I don't I haven't dug into it in detail but we're at the beginning of the representation of visual objects as NFTs and it's logically going to start with less expensive items like 300 t-shirts or expensive t-shirts but they are not actually highly expensive items in the house.

And as we learn more we'll move up the value chain into more and more expensive objects but this area has been truly almost completely unexplored. It's going to be very interesting to see how this plays out next slide.

Okay, all of those are topics we are going to cover in the coming weeks I want to talk just for a couple of minutes on the market structure to give a sense of where we are in the overall size area of development.

What have you to point out - this is in no way a comprehensive list of exchanges there are many more exchanges but to me the most interesting thing about exchanges

is in the NFT space and almost all of them operate on chain. This means you have data that you just didn't have with traditional centralized exchanges and traditional centralized exchanges report some data they might have an API they might

share some stats and figures but they're not showing you every trade that's in their own matching engine or whether it's open seer super rare looks rare.

You can just go on the theorem blockchain and see every trade has its a level of transparency that I don't think we've ever seen in markets and so this allows for a lot of data collection to a minimum but it also allows I think for a more interesting and competitive environment looks rare when it launched in a form of what is known as a vampire attack on Opensea it basically dropped tokens on the large customers of Opensea in the hope that this would incent them to move their business looks rare.

Well you can't actually do that in the centralized one right like finance can't call up Coinbase and say hey Brian I’d really appreciate it if you'd send me your customer list. And in fact not just your customer list and their contact information but their bank

accounts and also if you could be so kind as to rank all your customers in order profitability because I really want to go after your profitable customers and take them from you.

It'd be very much appreciated just email it over to me to hear yeah check at finance.com right? That's how it works this is like the most closely guarded data at one of these companies and in the NFT world. It's all out there in the open not only it's not closely guarded it is literally not guarded at all it's on a public blockchain and once you've seen this it actually feels strange to go back and if you're truly a believer in free markets if our regulatory system could get past its one-sided view of crypto we'll talk about that later and think about what this can mean for capitalism for consumer surplus for actual free markets. It's very good for consumers there's a reason that transaction fees are low and dropping in these marketplaces they'll continue to drop because you can compete and you can compete in a way that you know nobody can compete with the Apple.

App store for apple devices so I think it's interesting that we'll have a pretty open and

transparent view of the trading in this space. Let's go to the next chart.

So this is a chart that comes from a team at the University of Nicosia called NFTvaluations.com. I’m an advisor to the team a bunch of other six five to nine people advise the team. They're trying to build up market caps of various collections token by token. And the market cap in a fungible collection is easier right? You just take the number of Bitcoins you take the last trades you multiply those two together as you know that the market cap of bitcoin is 385 billion dollars or whatever it is.

The market cap of the Crypto punks is hard because sometimes some are alien some are zombies some are humans, some have hoodies, some have mohawks some have the dreaded spotty face I mean what you need to do is calculate the value of each one and then add it up and it's hard and on any given token you might be wrong but I’ve seen the data that underlies this.

It's certainly more than good enough for the purposes of this chart right any particular token might be wrong but in aggregate I think the mistakes cancel out and what it says is that for PFPs and generative art and this data does not include one-of-one art yet. It does not include metaverse land except I think the other side land is in there um it does not include utility-based which mostly doesn’t exist except for ENS and it does not include gaming but it does have most of the major PFPs and generative art collections.

The overall market cap is around 10 billion dollars today. At peak happiness in the crypto markets it was around 30 billion dollars this matches my sense and so it's 10 billion maybe with the other sectors in it's 15 billion. Something like that what is my takeaway from this the space is still absolutely tiny. Fungible tokens - we're flirting with a trillion dollars recently the peak they went almost at three trillions. I say this all the time to everyone. I can find the only thing I’m a hundred percent sure of is the current ratio of fungible token market cap and non-fungible token market cap which is today about a hundred to one that ratio is wrong.

I think that ratio is going to get closer every year. I think one year eventually they're going to be more or less the same that might take a decade but they're going to be more or less the same and they're probably going to be more or less the same at a higher number than we are today.

Now I got pretty active in the Bitcoin world in the summer 2013 and in those days the market cap of Bitcoin would you know go to five billion dollars and maybe all of the other altcoins maybe you'd get to 10 billion. I don't remember the details but it's in that range and this is what it actually feels to be. This is what the maturity of the space feels to me like it feels like 2013 Bitcoin era. It's about that size, it's still a fairly close community I tell people sometimes enjoy this. Is the time when if you're really active in the space you can sort of kind of feel like you know everyone.

You might not know them individually but you know them that's going to change it's going to change fairly soon and it's going to change because the space is going to get bigger and it's a good thing. The space will get bigger. It's a healthy thing but fairly soon there'll be hundreds of things going on all over the world in all types of sectors and sub-sectors of NFTs and you'll have no idea about them because you'll be focused on you know generative art in south America or something.

But so I think the important takeaway is it's still very early. It means the space is also going to be hugely volatile all crypto assets are volatile bitcoins the least volatile theorems a little bit more volatile the altcoins are more volatile than a theorem NFTs are more volatile than all of them. And that has to do with their level of maturity which is not very mature by the way I just want to be clear and I reiterate George’s not financial advice from the beginning.

Just because the NFT space today is 10 billion dollars and I think one day it's going to be

100 billion or a trillion it does not mean your NFTs are going to go up 10x or 100x.

Your specific NFT might go to zero and that market cap could be in a new NFT collection. NFTs do not have the same network effects that Bitcoins right?

With Bitcoin most of the value of the money currency commodity store value. Usage case coalesced in one token that's definitely not going to happen in the NFTs space. Um NFTs represent a wide range of things. We've been discussing so there's going to be a broad set of NFT tokens and collections that are carrying this. Market cap the vast majority of them not yet invented so certain of course NFTs will do well

over time but my perspective is not that the average NFT will do well over time economically. In fact, my perspective is actually close to the opposite the average NFT will not do well over time. Some of them will but most of them won't. But what is absolutely the case is that NFTs as a category will do better and better and better every year. You know subject to the normal macroeconomic and crypto market cycles. Let's go to the next page

So these are the two different ways that they calculate the market cap. Anyway for these

purposes the same. The interesting thing I would point out is among the two categories PFPs and generative art. Most of the market caps and PFPs and it'll be very interesting

if anyone can come up with a reasonable estimate for the value of one of one art.

That's a very difficult problem because it basically never trades so we'll see what that looks like. But I’ll be surprised if it's more than generative art right now. I guess it's in the same range so it does mean that even though a lot of people say like oh I don't know about PFPs maybe they're not great.

Most of the market cap the market in aggregate values PFPs more than anything else

that might be wrong. We'll see, but it's what the case is today an interesting sub-point a lot of that market cap is in the Yuga collections or mutant apes punks.

We have one of the co-founders of Yuga coming in a couple of weeks. We're going to discuss that and if that's healthy or not healthy. What it means is how that space evolves.

But today the things you should take away are the space is 10-15 billion dollars most of it in PFPs and as we'll see. When we do the more detailed PFPs most of it in fact Yuga labs uh manages PFPs so let's go to the next bench.

Let's go to conclusions. Okay, very very high-level summary and I think we cover this in more detail. But NFTs are unique enumerated contracts that can live on smart contract blockchains. They will certainly there are already certainly representing a lot of intangible objects and represent a lot more intangible objects and in time tangible objects the potential addressable market is gigantic. But the current NFT market is tiny. So many exciting things have happened but it is still super immature and super experimental.

Many things are going to fail there are many new things that we're going to invent along the way that have not been invented and so we're at the beginning. In the beginning, we'll have several cycles of up and down and new inventions along the way over the

Next, you know over the next decade. Let's see the next slide.

We have put a little bit of extra greeting for those a little bit more technical you know

or you can go see some of these standards of how an NFT token is designed and what the design standards are. If you're not technical I think you're going to find the first four licks borderline incomprehensible and I wouldn't worry about it. You know if you're more technical and you'll want to see the protocols it could be interesting.

A lot of these big picture ideas I tweet a lot and tweet storms and that's the link to all the tweet storms but we're working on trying to get them in a format that people can read easier so at some point during the course we'll have that and I’ll share it and some of these topics you know - real estate and memes and what have you are covered well in the tweet storms and so we'll make that available and then the data we just saw on market cap came out of a report that the NFT valuations teams have recorded.

It's online there's a link there they have not learned to make it an NFT yet. We should harass them to make it an NFT. But right now it looks like it's just a PDF on their server but there are some interesting facts and figures there to look at.

Okay, I think these are our official slides. I think George is going to come back here and what we're going to do is answer some questions. And hopefully, the team has been pulling together questions while we chat. Maybe we can spend George on 15, or 20 minutes answering questions.

First of all, thank you very much for this. This was as always hugely enlightening. We are at the beginning of the beginning this is what I’ve kept and I think we're gonna be coming back to this thing later on. So first of all the team has been active in the chat and they have been responding to people's questions and covered many of them.

George: There are a couple of questions I could relate them to you. One is: What are your thoughts about manifold launching an gallery-themed marketplace yesterday?

Punk6529: Well first of all I would say I think Manifold is great. I think they have done

the best work of anyone in terms of helping the community realize it is doable manageable and with the help of their tools easy enough to get um to launch on your own contract. I've used manifold contracts for several things I found their tools helpful so I think Manifold's great. I saw their announcement that they're going to make a marketplace. I think it's a logical move for them.

Punk6529: I think it is also always a challenging business model. Marketplaces are very successful when they're successful and tough to break into when you're new right? So right now most of the volume by far is on Opensea and that makes Opensea an extraordinarily valuable marketplace. There are endless teams coming from different angles to try and take some of that market share and some of them have taken some market share but the competitive dynamics of who gets which part of the marketplace market share is probably the single most competitive thing in NFTs right? Because it's the single most valuable prize. If you can win it so I understand why they're doing it and I wish them luck because I think they're you know they're very good operators in the space they’re promoting the right values but it's also not a sure thing because breaking the liquidity of another marketplace is hard.

George: Okay thank you. there's another question that I think I can take. It's technical about the course: When will the airdrop occur? I guess the question is about the airdrop of the material for week one. The answer is that we have already started airdropping course material the first 400 of you have already gotten the material. This presentation is in their wallets. The reason for the delay has been that we basically broke the limit anything about the 19 000 airdrops needed special handling from us so we're doing it in batches so those of you that have minted the course NFT you should expect this presentation dropping to your wallet in the next couple of hours and then we're gonna be having multiple airdrops for the videos and everything

else in the course. Please monitor our Discord and Twitter. You see both in the slide here because we're gonna be announcing every time we're doing an airdrop.

George: The next question is actually very interesting: Is there a pull-up proof of attendance protocol? To admit, I mean I think the answer is no right now. Right but it's a very good idea and so we should do it for some event yeah. Yeah let's make a note for that and get back to it it's a very good idea I think and some of the things that we are doing especially with our guests might uh it might be a good thing for people to have a proof of attendance on these events and I think as we roll out the campus over the next few weeks this is going to become more pertinent.

I can actually see the question chance for myself: our Amazon web service is responsible for storing all of our NFTs? Well, I don't know who our NFTs are but certainly not the ones for this course right? The ones for these courses are in your wallet. We're all about decentralization and setting best practices so we will not be putting your NFTs on Amazon web services.

Another similar technical question people asked why did we make the mint passes

as ERC 720 ones, not 1155s and the answer is so we can track individuals right like so people can. Saying this is the one that I got here and I did this over time when an 1155 doesn't 1155 is nonfungible within is fungible within the context of a specific token right? So if we want to say a student one, two, three, or four did these 18 things over the course of the semester. We need a 721 to do that George is that correct?

George: accurate yes, yes. I think it's it's an accurate description. There's a similar question that says if I transfer my course NFT to another wallet where do the airdrops come? To the new wallet? The answer is they should. As I’ve said in the

beginning we're experimenting there we've done our tests at a limited scale today if I’m not mistaken we have had up to 3000 people joining us live we have more than 20 000 wallets connected and minting the course access token.

So what we're doing is we are we're querying the contract and we're looking at transfers so we should be able to airdrop the NFTs to the current holder of the token. This means that if you have minted your course access NFT and then you transferred it to another wallet all future airdrops will happen to the new wallet. However, if there have been airdrops to the previous one obviously these are not going to be automatically transferred. You would have to either leave them in the old wallet or manually transfer them.

There I don't see why the team couldn't snapshot the new wallets for airdrops to allow lists of things like that so I think we'll be okay yeah I’ll think on that topic. I lost the chat

Here's a very good question: are you going to issue soulbound NFTs for students who have completed the course?

Very good it's a very good question. We have our initial view but we're going

to think about it over the course of the semester and give a final answer at the end of the semester But my general view is no. We will not make them soulbound because my general view is let's say you want to hold this certificate for the next 40 years of your life.

There's zero chance you will not change wallets during that period. In fact, you will probably change wallets many many many times during that period and if you want so either that means you're going to be stuck maintaining an old wallet for the rest of your life just to hold a course NFT or the University of Nicosia is going to have to provide customer support for the rest of your life. Where they'll have to verify that you are now that new person in another wallet to transfer which seems quite difficult. So we think they will not be soulbound but probably once we get to the last few weeks of the course we'll come out with our logic on that and how specifically we think about

doing that fair George?

George: yeah I think it's fair I as you said I too haven't made up my mind 100

percent about the applicability of soulbound tokens for university degrees and

certificates but given that long term there's as you said zero chance that people will not be migrating to new wallets and so on and so rot this I think the default option should be that these things should be transferable. Now we need to figure out how we can make them transferable but not sellable because obviously, we don't want people to go into a marketplace and sell their degrees to others. That's totally an open question uh we have some thoughts on that too but I think we should start with a non-soulbound token and you know be convinced otherwise.

The next question: Are you scared of the big brand style of centralization or should we embrace them because there's truly room for both the answer to that question is yes and yes I had many arguments discussions healthy debate vigorous debate on Twitter about this topic when big brands issued NFTs right and a lot of people said well we don't like it that Adidas did an NFT draw we want to be here for the independent artists right and I’ll answer the second question.

First of all, it's a permissionless network anyone just like an independent artist can

issue an NFT Adidas can issue an NFT and they don't have to ask our permission to do so right if a lot of people went and spend a lot of money on the Adidas NFT and it suggests that people want the Adidas NFT right if everyone really didn't want the Adidas NFT it wouldn't have been to them right it can't be like it's very very bad a lot of people bought it if a lot of people bought it a lot of people wanted but to me and the things that I care about which is ensuring that our the digital world in the future the metaverse is decentralized well if Adidas doesn't issue an NFT.

It's not like the alternative is Adidas will not participate in the digital economy Adidas

will participate in the digital economy anyway and they will issue some type of digital collectible. On Facebook and the same people who like Adidas and buy Adidas shoes will buy the digital collectible on Facebook and Adidas will earn the same amount of money from doing this and promoting centralization whereas if Adidas issues on an NFT instead Adidas and its market power is promoting decentralization so, between the two, there's no actual option to say Adidas should stop earning revenue and people should stop spending money on Adidas right they will this is going to happen and so if that's

the case do we want them on our decentralized quote-unquote rails or do we want them on someone else's centralized rails. I prefer that they come with us now does this create a risk that people might or big brands might successfully centralize the space? Yes for sure the big brands are excellent meme makers, they're excellent myth makers, they have millions of customers they have years of marketing people like them and so there is a window now where new crypto native communities brands ideas can emerge but that window won't be open forever right eventually the big brands are going to come and they are going to be successful and we have to in the meantime stand up some of our own brands some of our own communities some of our own ethos to be able to hold their own with them.

It's also why I sometimes laugh when you know people think that certain artists and

certain artists are minting too much or becoming too big none of this is true. Everything in the NFT space altogether is still a rounding error versus the big brand’s big

society centralized society and so. This is if we want to be successful in the world of large

we have to get bigger all of the big NFT native brands need to get bigger so that when we're 15 years talking about Disney and Nike and Adidas and Apple we're also talking about 10 other brands that got built in this era and that have decentralization as their underlying ethos.

Otherwise, all that's going to happen is only the big brands will go away there's no version where we can only stay small I don't think that actually happens.

Okay I think there's a related question regarding big brands whether they will be on the path of decentralization in the future so for example if you see Facebook

or Twitter become decentralized in a few years from now. What are your thoughts on this?

Well is that the question about tech companies being decentralized or is it about brands being decentralized? So I think well the first part of the question is about brands and then the example that the student offers is about Facebook and Twitter but I think we can take both.

Okay, one second so let's take brands first because this is a very interesting topic I think of something like Nouns right? Nouns are trying to build a very decentralized brand right? They have their nouns glasses and they're of course token-based and the actual imagery is cc zero public domain imagery and so anyone can use their brand imagery.

Punk 4156 who's one of the founders there is going to come on the course later in

the semester to talk about this and I think his view is that network brands that take advantage of tokens and social media and public domain PP will actually emerge and be able to compete with big brands because they'll use the power of networks. It's a very interesting question it's a very interesting experiment nobody has nobody knows how it's going to play out but I very much look forward to seeing it.

Now to another question: Will we have decentralized social media in effect?

I think the answer is yes. I’ve also thought that for many years and I think it's less likely that it's because Twitter will become decentralized on the blockchain or have you in fact Elon Musk yesterday said specifically that he does not want to do that he does not think the scalability is there to run a Twitter like service on blockchain whether he's right or wrong that's what he believes.

Sounds to me that Elon wants to build the western Wechat uh but I do think some version will emerge it's like the marketplace question Twitter has gigantic network effects, and Facebook has gigantic network effects what is the thing that is interesting enough to pull people away and my guess is with always these things it's not going to be twitter 2.0 and there's a lot of people trying to make Twitter 2.0 trying to make Twitter but decentralized and I wish them the best and I hope it works but my gut sense is people get disrupted not by just the exact same version of what they are but decentralized they get disrupted by something that they don't think is a competitor at first they look at something say okay this is not a competitor I think the thing that will disrupt Twitter is something that when Twitter sees it on day one and year one.

I was saying this is not a competitor to me at all I don't have to worry about and it's going to come from a completely different angle that architecture will be decentralized and then one day it will be taking market share from Twitter in the same way that Twitter today takes market share from the New York times and at some point you know 15 years ago if you told the New York times you are going to lose market share and brand share and setting the agenda for the world share to Twitter it would be a laughable proposition and yet it happened and so I think it won't happen but probably not in a direct clone but I wish the direct clones luck and maybe

Hopefully, some of them will work I’ve supported some of them a direct clone would also be helpful and but I think it's going to look a little different

Okay we’re closing to two hours I know we've said that its live session would be one hour long but I guess this one was would have to be longer anyway because we needed to cover the course logistics as well I think we've covered most of the questions that were related to this week's material.

I see a number of questions in the chat but they are related to stuff that we will

cover in the future we have another 11 weeks ahead of us so let's not cover everything today.

I guess we could wrap it up at this point. 6529 any final parting thoughts?

Because before I give people a few practical pointers for the future no I think it's the great look we have I don't know 30, 40, 50 sessions inbound so we'll have plenty of time to cover a lot of topics if you are not following the unique metaverse Twitter account and Discord please do.

For now, this is probably the only centralized part of the infrastructure and we're trying to think about how to eliminate that as well but for the next few weeks I think that is real it's a real thing and so do follow it and there are going to be ongoing developments every few days so keep an eye there so you know you know what's going to happen.

Absolutely we're going to be using both Twitter and Discord to announce things almost on a daily basis because we're building around the clock so as 6259 said please follow us on Twitter and make sure that you uh keep an eye on Discord, especially in the announcements. Discord is our primary course support channel. As well you can email us at [metaverse@unic.ac.cy](mailto:metaverse@unic.ac.cy). Although I would say that Discord will probably result in a faster resolution of whatever issue you have I would like to remind everyone that the next live session for week two is going to be about copyright and provenance. Will take place on Wednesday so that's October the 12th same time five p.m eastern European standard time Cyprus time. So looking forward to seeing everyone then in the meantime have fun and uh keep an eye on your wallets because we're going to be airdropping lots of things uh to your wallets in the coming days.

Bye-bye everyone.