CITY COUNCIL
CITY OF NEW YORK

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TRANSCRIPT OF THE MINUTES

Of the

COMMITTEE ON TECHNOLOGY

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HELD AT: COMMITTEE ROOM – CITY HALL

B E F O R E: Jennifer Gutierrez, Chairperson

COUNCIL MEMBERS:
Shaun Abreu
Robert F. Holden
Vickie Paladino
Julie Won
Keith Powers

A P P E A R A N C E S

Bryan Daugherty, Director of Public Policy for the Bitcoin Association

Alan Rechtshaffen, Chair of the Digital Assets Forum and Lab at the Wilson Center in Washington

Albert Fox Cahn, Executive Director of the Surveillance Technology Oversight Project

Cleve Mesidor, Executive Director of the Blockchain Foundation

Julian Kline, Head of Policy at Tech NYC

Yorke Rhodes, III, New York City resident

Jazzy Smith, Fellowship Manager at BetaNYC

Theo Chino, former Bitcoin entrepreneur

SERGEANT-AT-ARMS: Test, test. This is a test. This is a hearing on Technology. Today's date is February 15, 2023. It's being recorded by Sakeem (phonetic) Bradley in the Committee Room.

SERGEANT-AT-ARMS: Quiet down. Please take your seats. We're about to begin.

SERGEANT-AT-ARMS: Good afternoon and welcome today's Committee on Technology.

At this time, please place your electronic devices on vibrate or on silent mode.

If you want to testify, please come up to the Sergeant-at-Arms desk and fill out this testimony slip.

If you want to submit testimony, you may do so at testimony@council.nyc.gov. Again, it is testimony@council.nyc.gov. Thank you for your cooperation.

Chair, you may begin.

CHAIRPERSON GUTIERREZ: Good afternoon, everyone. Welcome to our hearing this afternoon. I would like to recognize Committee Members, Council Member Abreu and Council Member Holden who I believe is on Zoom before getting started but welcome everyone. Buenas tardes.

I'm Council Member Jennifer Gutierrez, and I'm the Chair of the Committee on Technology. I'm excited to hold this important first-ever hearing on cryptocurrency and blockchain technology in New York City.

Cryptocurrency and its associated blockchain technology have transitioned from niche status to mainstream popularity and have had exponential growth in recent years. This cryptocurrency industry is estimated to be valued at around 1 trillion dollars globally today from just 5 billion in 2015. While blockchain technology has seen expansion across industries for uses like supply chain management, financial transactions, online certificate verification, and more, cryptocurrency and blockchain technology both represent great potential. For instance, cryptocurrency provides transactional freedom that is not present in a centralized financial system and typically requires just a computer or smart phone with internet access to use, providing a level of accessibility that does not exist in traditional banking institutions. Blockchain technology provides a level of data stability that ensures an unprecedented degree of

authenticity and also increases the security, transparency, and traceability of data. Having such trust-boosting functionality creates immense benefit across industries by streamlining operations and decreasing the potential for fraud and abuse.

However, while cryptocurrency and blockchain technology have the potential for societal benefits, they also have considerable risks. Mining for proof-of-work concept, cryptocurrencies like Bitcoin requires high levels of energy consumption and have environmental impacts. Cryptocurrency is also generally highly volatile in value and is largely unregulated with incidents like the FTX collapse resulting in the loss of billions of dollars throughout the crypto market with little recourse for people to recoup their investments.

Blockchain technology also has its own dangers and disadvantages. Setting up a blockchain can be expensive and resource-intensive, and the distributed decentralized nature of blockchain technology means that flaws within a blockchain system are harder to correct in a timely manner. Further, the permanence of blockchain data creates a unique privacy risk where eventually enough data can

be gathered to identify a user based on their history of blockchain transactions.

While cryptocurrency and blockchain technology are often discussed together, it is also worth noting that they can be utilized independently. They each have components that can be adopted or regulated by government, but blockchain technology currently has the most potential for use in government settings. The possibilities for crypto and blockchain technology in New York City are apparent, and it is thus vitally important that we fully explore the pathways to provide these potential benefits to New Yorkers.

Mayor Eric Adams has stated he wants New York City to be the "center of cryptocurrency and other financial innovations" and converted his first three paychecks into cryptocurrency. CTO Matt Fraser has also highlighted how blockchain could potentially be used for functions like asset transfer and records validation. We must do our due diligence to not only understand cryptocurrency and blockchain technology but also make sure that New Yorkers can properly access the necessary information to safely navigate these novel technologies.

Today's hearing aims to draw in any vision for both technologies, ensuring that as a City we are giving thoughtful consideration to this potentially transformational technology and industry rather than refusing to engage because the issues in underlying technology are complicated and not yet fully formed. The Committee is looking forward to learning more about the present status of cryptocurrency and blockchain technology as well as efforts that our City is taking and can take in the future to maximize the useability of cryptocurrency and blockchain technology but, importantly, while still protecting and uplifting New Yorkers. We are eager to hear from the Administration, advocates, and experts on the opportunities presented by cryptocurrency and blockchain technology.

Now, I would like to thank the Technology Committee Staff for putting together this hearing. I will now turn it over to Irene, our Committee Counsel, for administrative proceedings.

COMMITTEE COUNSEL BYHOVSKY: Thank you, Chair, and good afternoon, everyone. My name is Irene Byhovsky. I'm the Counsel to the Committee on

Technology, and I will be moderating the hearing today.

Now, we are pleased to welcome representatives from the Administration. We have with us Commissioner Fraser, and I understand that Ryan Birchmeier is also here and available for questions.

I would like to administer the affirmation for each representative. Please raise your right hands. Thank you.

Do you affirm to tell the truth, the whole truth, and nothing but the truth before this Committee today and respond honestly to Council Member questions? Commissioner Fraser.

CHIEF TECHNOLOGY OFFICER FRASER: I do.

COMMITTEE COUNSEL BYHOVSKY: Thank you. You may begin your testimony.

CHIEF TECHNOLOGY OFFICER FRASER: Good afternoon, Chair Gutierrez and Members of the Council Committee on Technology. My name is Matthew Fraser. I'm the Chief Technology Officer for the City of New York, and I lead the Office of Technology and Innovation. Thank you for the opportunity to highlight OTI's role in identifying how new technologies, such as blockchain, can be deployed to

enhance government services and to provide a platform for a robust discussion about this relevant topic.

Blockchain, a distributed ledger technology that can enable more efficient and transparent transactions of digital information, has seen rapid growth over the past several years. The cryptocurrency market, for example, which illustrates only one use-case of the underlying blockchain technology, is worth hundreds of billions of dollars today, having barely existed a decade ago. This sort of growth presents an incredible opportunity if harnessed in the right way.

In addition to the blockchain industry helping New York City's economy recover from the lingering impacts of the pandemic, blockchain technology has the potential to streamline and centralize document retention, enable real-time records validation, and support asset transfers, among many other applications.

As the nation's most forward-looking city, New York has a responsibility to carefully evaluate any emerging technology and to put systems in place that can leverage that technology to strengthen government services, propel economic

growth, and improve the lives of New Yorkers. For the past several years, New York City has proudly been a pioneer in embracing the blockchain industry as it evaluates the potential government applications and plants a flag as a viable home for blockchain companies that can grow our economy and hire New Yorkers. For example, the New York City Economic Development Corporation helped to sponsor New York City Blockchain Week and launched a blockchain-focused civic technology competition, among other efforts.

The Adams Administration has also taken a forward-looking approach to this emerging industry and is exploring potential use cases that can make government work better for New Yorkers living in an increasingly digital society. For example, the administration is actively investigating using blockchain technology to support the validation and sharing of legal documents such as birth certificates. Recently, the Department of Finance launched a proof-of-concept to test how blockchain could be used to detect and reduce deed fraud. Additionally, the administration is evaluating the use of a digital wallet, which will help meet New

Yorkers where they are and support electronic payments and transactions.

As the City's central technology authority, the Office of Tech and Innovation has stood up a robust Strategic Initiatives division aimed at developing partnerships, networks, and programs to cement New York City as a leading hub for inclusive innovation. Over the past year, we have built a research team within the division tasked with investigating, piloting, and developing framework to implement emerging technologies.

With this team in place, we are actively recruiting two digital assets and blockchain policy advisors to investigate and advance government blockchain use cases. The individuals who will fill these positions will work with government and external stakeholders to identify, assess, and develop strategies to implement blockchain applications in the right way. It is important to note while blockchain could have a plethora of use cases in government, our team is laser-focused on researching and determining where blockchain implementation could make more sense than traditional technology.

We feel that taking a thoughtful, measured approach to the evaluation of any new technology is critical for our city. The blockchain industry, like any emerging technology, has felt its share of growing pains largely due to over-hyped companies, bad actors, and ill-suited applications.

The Office of Tech and Innovation is committed to continuing this approach, working with partners across government, and hearing from public and private sector stakeholders to find ways for New York City government and its economy to benefit from this technology, which is ripe with potential.

We look forward to discussing this further with the Committee, and I will now take Council Members' questions.

CHAIRPERSON GUTIERREZ: I'd also just like to acknowledge Council Member Vickie Paladino who has joined from the Committee.

Thank you, Commissioner. Thank you for your testimony.

I think you covered I think a lot of why we wanted to put this hearing together, right, is really understanding the direction that the City and this Administration and us collectively want to take

with regard to this new technology. Can you share a little bit about how this Administration views cryptocurrency's role in the City and does the City accept cryptocurrency as a valid form of payment in any of its operations and functions today?

CHIEF TECHNOLOGY OFFICER FRASER: Got it. I think before we get into crypto, we'd have to level set our expectations on where crypto fits in the scheme between blockchain and what crypto is. Blockchain is a foundational technology. We as a City are exploring many use cases where we can apply that to remove friction from city services. Blockchain being distributed ledger base which means it enables more transparency. A good example of that is between the three Members sitting ahead, if one of you has five dollars in your pocket and you give a dollar to the other person, the only people that know that that transaction happens is the person who had the money and the person who received the money. What blockchain enables is a more transparent action, not saying where the money specifically went, but what you had in your account, a transaction occurred, and now what the new balance is. When we look at where crypto fits in, in terms of where the City sets, the

City as a government entity cannot accept payment in any currency that's not recognized by the federal government so, as it stands right now, we are limited in taking payments in things like the U.S. dollar. We are exploring use cases where we could use third-party services so that you can take things like crypto to pay for your tax bill, pay for your parking tickets. By using a third-party service that takes that crypto asset, converts it into U.S. dollar, and then renders that payment back to us in U.S. dollar so short answer to the question is at this moment there is nothing that we are accepting where we're directly taking crypto in as payment.

CHAIRPERSON GUTIERREZ: Okay, and so, outside of the, you mentioned parking tickets potentially?

CHIEF TECHNOLOGY OFFICER FRASER: We're exploring a number of things. For our payment services, when you look at things like paying parking tickets online or you look at paying your tax bill online, there are systems that support facilitating that online transaction. If we can partner with, and this is one of the things that we're exploring, partnering with a company that takes in crypto

payments, people like PayPal, Coinbase, you can pay something in crypto, it will convert that crypto into U.S. dollar and then render that cash out to the City to settle that transaction.

CHAIRPERSON GUTIERREZ: Got it. Thank you. I'm curious, so I'm just going to reference a few comments that Mayor Adams has made in the past, maybe the last year and a half, regarding crypto so feel free to answer, I know that these are his quotes, but to the best of your ability. I do remember the Mayor making a comment early on about a system potentially like CityCoin like we saw in Miami, do you have a sense if the City and the Administration are at a place where they can speak a little bit more about kind of what came about any exploratory phase of instituting CityCoin potentially here for the same purpose that you just highlighted, like a parking ticket? Is that something that feels like the future for us, utilizing CityCoin or something like that?

CHIEF TECHNOLOGY OFFICER FRASER: I think without context some of the statements might be, it's easy to misinterpret so in this particular case what the Mayor was referring to is there's a significant portion of the population of New York City that

represents the unbanked and underbanked community, and having assets or having a means where members of that community can participate to build wealth, to get a pathway out of poverty, is something that the Mayor fully supports.

Now, in terms of specific investments or bringing something like a New York City Coin to market or anything along that lines, unlike the City of Miami, New York City has historically been the financial tech capitol of the world, and we can't afford to make investments or wildly throw products out that doesn't necessarily meet a maturity level that we feel comfortable with. Since the start of the Administration, we've been evaluating what's the right way to enter the market if we enter the market, and, specifically, where should we place our efforts around blockchain and how should we leverage crypto. At this moment, we haven't made any tangible decisions on whether a New York City Coin would ever emerge, but we are looking at practical applications of blockchain-related technology and how we can use third-party services to accept payments using crypto.

CHAIRPERSON GUTIERREZ: Thank you. I have a followup question regarding crypto. I do remember I

back in November 2021, the Mayor did also mention that he wanted to create committee, Cryptocurrency Committee, I don't know if you mentioned that in your opening testimony, but can you share anything about said committee, if it's been formed, if they meet, anything regarding this kind of committee? I'm not aware so if there's anything you can share, if there's a timeline, any public-facing kind of reporting from said committee?

CHIEF TECHNOLOGY OFFICER FRASER: Sure thing. When we look at getting feedback from the crypto industry, and not just the crypto industry, look back at the broader blockchain web 3 industry, we have a number of forums where we take information in today and we hear feedback from industry in terms of what they would like to see in New York City and things that are impediments from growing in New York City. Now, a lot of that communication is fostered through our Economic Development Corporation and some of the existing communication channels that come in through that end. We have explored formally establishing a blockchain web 3 committee. We are in the process where we're still evaluating specific membership, charter, and responsibilities, but as it

stands right now most of the communication that we get in comes through one of our existing channels that we have with industry today.

CHAIRPERSON GUTIERREZ: So my understanding is there's no cryptocurrency committee, but you are gearing more towards creating a blockchain committee.

CHIEF TECHNOLOGY OFFICER FRASER: Yeah, blockchain web 3. Crypto is only one aspect of how the blockchain can be…

CHAIRPERSON GUTIERREZ: I'm just quoting him, but I understand what you're saying.

CHIEF TECHNOLOGY OFFICER FRASER: Yeah, but, again, with a little bit more context, web 3 blockchain committee with a subgroup that's focused on crypto.

CHAIRPERSON GUTIERREZ: Okay, and has the committee been set up?

CHIEF TECHNOLOGY OFFICER FRASER: No, we're in the process of establishing it.

CHAIRPERSON GUTIERREZ: Okay. Would OTI have oversight over the committee.

CHIEF TECHNOLOGY OFFICER FRASER: As the City's tech authority, we'd have oversight from a

technology perspective, but, again, when you look at the broad application of what blockchain will enable, there's certainly financial impacts, there's certainly other sorts of impacts that this will bring to market so we will do it exclusively from OTI but from the CTO role it would be a mix of resources from the City that will help co-chair the committee.

CHAIRPERSON GUTIERREZ: Okay, and do you have a sense of what other agencies?

CHIEF TECHNOLOGY OFFICER FRASER: Historically, in these efforts I've mentioned the Economic Development Corporation has hosted Blockchain Week. They also have a mission and mandate that's focused on economic prosperity but rebuilding workforce in New York City so EDC will certainly play a part and then there are other members of the administration that, other teams from the administration that will play a part but as the list comes and as we formalize, I'd gladly share with Council.

CHAIRPERSON GUTIERREZ: Yeah, yeah. You should, for context, know that we invited a number of agencies today. OTI is the only one that agreed to come so I appreciate it, but the reason I raise this

flag is because they're not even here to start this conversation so I don't know if there's any insight that you can share, if those conversations with those agencies have even started, because obviously we want to bring them here so we can continue to work collaboratively, but do you have any sense besides EDC, have you started to have those conversations about working collaboratively?

CHIEF TECHNOLOGY OFFICER FRASER: We certainly have. Although the agencies aren't present, as the Chief Technology Officer of the City and as a Cabinet Member in the Mayor's Administration, I'm here representing more than just one entity. I'm here representing the City, and we have had conversations beyond the Office of Technology and Innovation exclusively with EDC, with Finance, with a number of other entities that are represented across including Department of Health and other areas that maintain vital records to see how we can leverage blockchain tech. The conversations are actively going within the City. One of the things that I'll note is when you step in on Day One, there's a lot of things that you want to accomplish as a priority, but it's like bringing a patient in through an emergency room.

First, you have to assess trauma and what's going on within the City itself. From a technology perspective, we had a number of areas that were critical, things like digital equity that were on the backburner but we had programs that were long started and had not materialized in a meaningful way that we had to pull forward so now that we've gotten to a space where we were able to deal in large cases with stopping the bleeding, we've got some other things that are coming out within the next month that may come up as the questions go on. We're now in a space where we can more actively and holistically look at blockchain application across the City, and I am confident the next time that we have a forum like this we'll have broader participation from the administration.

CHAIRPERSON GUTIERREZ: Okay. I'm curious, I know in your testimony you mentioned EDC specifically working on an initiative around blockchain so you should know that they declined to come today. They said they didn't have anything in the pipeline. I don't know if you can elaborate a little bit more on the said initiative. If there's anything you can share.

CHIEF TECHNOLOGY OFFICER FRASER: What EDC sponsors as a co-sponsor annually is Blockchain Week where it brings those that have leading innovation in leveraging blockchain-related tech, those that are interested in learning about blockchain-related tech, and then also bringing civic innovation together for those that are in New York that have startups that are focused in that space and bringing that community under Blockchain Week. Now thousands of people annually have participated in Blockchain Week, and I think the Economic Development Corporation in partner with the CTO's office have worked very closely on those events, and we expect that in 2023 that event is coming back this year in September.

CHAIRPERSON GUTIERREZ: Okay. Commissioner, what are some of the steps that you would like to see the City take with respect to cryptocurrency?

CHIEF TECHNOLOGY OFFICER FRASER: What I'd say is we're fairly limited in the steps that we can exclusively take with cryptocurrency because there isn't a federal regulatory framework as yet. As I mentioned, some of the barriers that we have in terms of what we can accept and what we can hope is limited

until federal policies mature. One of the things that I'd like to see as we have continued to see in New York, if we just look crypto as an example, I mentioned that New York City has been the financial tech hub of the world for the past better part of a century, and we expect to keep it that way. If you look across 2022, there was about 14 billion in capital raised in the crypto space. Of that 14 billion in capital, over 50 percent was raised in New York City. The next closest city was out in Silicon Valley, which raised three times less than New York then it was Miami which raised eight times less than New York so what I'd like to see from New York is for us to create a federal ground where these technologies can evolve and grow and we can continue to build local talent that can emerge into this market. Also, with this, there is volatility in anything that grows as rapidly as this does. If you go back to 2010, you're talking about a market that represented virtually nothing in the industry to a market today that represents almost a trillion dollars. Now, the fact that we're talking about a 14-year span where you saw that sort of rapid growth, we see a lot of volatility in that, but as the market

matures, we want to make sure that we don't miss the opportunity to ensure that New York City retains its place as the financial tech hub of the world.

CHAIRPERSON GUTIERREZ: Thank you. What steps do you think we can take to protect New Yorkers from potential harms from cryptocurrency?

CHIEF TECHNOLOGY OFFICER FRASER: I'd be very, very careful in sort of pointing out what the City's role in this, so the City, as a City, we are not financial advisors by any means, and I think the best thing that we can do are the efforts that we've taken across traditional financial tools, which is providing pathways where you can build financial literacy, helping people understand risks, where they should invest, where they should not invest, typically how they protect their assets and things along that line so we've partnered with, through DCWP and a number of entities, we've partnered and we've brought financial literacy courses out. I'm hopeful that as we go within the next year or so we can get more of those courses broadly available and then we can incorporate other things into that like the risks associated with.

CHAIRPERSON GUTIERREZ: Like universal?

CHIEF TECHNOLOGY OFFICER FRASER: I'm sorry?

CHAIRPERSON GUTIERREZ: What was the last part of it?

CHIEF TECHNOLOGY OFFICER FRASER: I said like the risks associated with investing in these types of assets.

CHAIRPERSON GUTIERREZ: Oh, I apologize. Acoustics in here are really bad. Thank you. I want to take it back to something that the Mayor had mentioned, I think it was in the Daily News, about wanting to introduce a cyberwallet for municipal workers and to infuse cryptocurrencies into city education. Could you explain a little bit about maybe what he meant by a cyberwallet for municipal workers?

CHIEF TECHNOLOGY OFFICER FRASER: Sure thing. When he says cyberwallet, it's akin to a digital wallet. Now, a digital wallet has no affinity to crypto or blockchain-related tech exclusively, but what it is…

CHAIRPERSON GUTIERREZ: But it would accept crypto? It could accept crypto?

CHIEF TECHNOLOGY OFFICER FRASER: A digital wallet by any means can accept any sort of

currency that you want to hold in it including crypto. The thought behind the digital wallet just to build out the broader context is when you think about the government as we render aid and as we give services out in terms of food benefits or transit benefits, that money is rendered out through traditional means, whether it's a debit card or whether it's an actual Metro Card that someone uses to go into the subway. By giving money out through those means, we're limited in the opportunities that we have to provide additional benefits. One of the things that we'd like to do as an administration is to get to the point, and the Mayor said this publicly, where we can incentivize healthier behavior. Imagine for food benefits if you had a digital wallet where you went out and you spent a dollar and you bought something like vegetables or something healthy versus buying sugary snacks or soda, and then the City could provide incentive points meaning dollar matching, dollar for dollar, on the things that you spent on healthy products versus on sugary products. A digital wallet gives us the capability to do those kinds of things. In addition to that, by broadening our eligibility framework and

by looking at who's actually taking advantage of public services, it might give us an opportunity to spot services that someone may be eligible for but they are not fully taking advantage of so the digital wallet concept is less about a crypto or a blockchain nexus. It's more about centralizing benefits on a single platform that gives you a holistic look at every dollar that you get from the City in support.

CHAIRPERSON GUTIERREZ: Yeah. Okay, so that's clear. How is that different than the MyCity app?

CHIEF TECHNOLOGY OFFICER FRASER: The MyCity app is a little bit different, but it's part of the same ecosystem. When we look at MyCity, part of the challenge that we have with government services is that over the past century as the city has evolved and especially as it's evolved from a technology perspective, services have been built up around agency identity and not around our customers, not around our constituents, so when you go online and you look at web presences, systems that are built in the Department of Environmental Protection are built for DEP, systems that are built in HRA DSS, are built for DSS, and there's not much context shared

between those systems. What MyCity is focused on doing is taking the customer and putting the customer up front. A very tangible example of that is what's coming out in the first phase of MyCity which is childcare. Currently for childcare, you have to interact with three agencies if you want to subsidize childcare in some form, the Administration for Children Services, the Department of Education, or the DSS, and that application process starts the same way. It's a New York State application form that someone has to fill out. Depending on what sort of childcare they want, they have to provide that information, let's say they go to ACS and they submit it and they go wait a minute, this was not what I was looking for then they go to DOE then they go to DSS and the process is a round robin until you find what you're looking for. What MyCity does is it takes that application in one time, conducts a preliminary eligibility determination, it tells someone which programs that they are eligible for and then they can make a determination of which agencies that they want to submit it to. What that does is instead of having an application that has to go to three separate places on paper, you have now one digital application

that you submit, you get a preliminary determination around eligibility to apply for the program and now you know where you're routing your application to based on what the program benefits are. When we look at MyCity and we look at the digital wallet, as MyCity evolves and as we offer more services, you'll get to the point where you apply for your transit benefits, you apply for your food benefits in the same place, and you're MyCity profile will be linked to your digital wallet so all of those things will be rendered into the same place.

CHAIRPERSON GUTIERREZ: Okay.

CHIEF TECHNOLOGY OFFICER FRASER: It's not too separate things, but it's two things that are connected.

CHAIRPERSON GUTIERREZ: And both the cyberwallet would also, I'm just trying to, I understand what you're saying how they're going to essentially be married at some point once it evolves, but the cyberwallet is also collecting information that is helping to determine eligibility for certain services is what I heard you say?

CHIEF TECHNOLOGY OFFICER FRASER: The cyberwallet can be used to look at utilization,

right, so if you look at something like where you spend in a store or you swipe and the transaction is associated with that swipe and what you're purchasing and how you can provide incentives, a digital wallet that's connected to a person's identity, that's also connected not just to one benefit but to all the benefits the City renders gives us insights into who's using it, who needs more of it, those that are buying, like I said, in some cases if we look at it just from the food use case, if you're buying healthy foods versus sugary snacks, if the City wanted to do an incentive program, it gives us a pathway where we could do matching, whether it's portions of a dollar or dollar for dollar for spends on healthy food products.

CHAIRPERSON GUTIERREZ: Would there be a day where once the MyCity app is fully evolved where a cyberwallet is not necessary if it feels like everything can live on the MyCity app and all the uses of it?

CHIEF TECHNOLOGY OFFICER FRASER: When I look at this, I look at the MyCity process as the application process that removes the paperwork that you have to do today. We get to the point where

instead of going to 100 different places to apply for services and benefits, you go to one place, you fill out an application, and it gives you access to the things that you need. The wallet component is when you want to manage your actual distribution of funds, how much money do I have in the bank, I want to swipe a card somewhere and I want to pay for something. The wallet part controls the financial aspects including disbursement, where you're money comes in, and debit/credit activities of where you swipe.

CHAIRPERSON GUTIERREZ: Got it. Okay, are there any risks that you can anticipate with the cyberwallet, especially because it's collecting personal information?

CHIEF TECHNOLOGY OFFICER FRASER: Yes, I think for us any time that you have any product that emerges into market and then also when you reach portions of the population that may not have had access to these types of services before, there's a digital and financial literacy effort that's necessary, but in terms of ensuring that we're safeguarding the data that we're collecting, every application that we put out, every service that we put out goes through a rigorous penetration testing

exercise to make sure that it meets all of the security standards of modern-day applications. In addition to that, we have a team at New York City Cyber Command that operates 24/7 ensuring that the City's tech (INAUDIBLE) is well-protected.

CHAIRPERSON GUTIERREZ: What other city agencies or who else would have access to that data?

CHIEF TECHNOLOGY OFFICER FRASER: In terms of the data that comes out of the wallet?

CHAIRPERSON GUTIERREZ: Yes.

CHIEF TECHNOLOGY OFFICER FRASER: I think as we move forward just like every other agreement that we have in terms of distributing data throughout the City, goes through our Office of Information Privacy to ensure that our constituents are not leaking information out in ways that they don't expect, and the use of the data that comes out of any product that we put out is governed by MOUs between the agencies that have to prove a need to have that information so it's not like everyone can come and they have carte blanche access to whatever they want, but those policies are formed as the products come out and as relevant agencies share, we refine the

policies to make sure that only those that need access get access.

CHAIRPERSON GUTIERREZ: Okay. Is there a timeline?

CHIEF TECHNOLOGY OFFICER FRASER: In terms of timing, we expect by the end of this calendar year our first pilot to go out, by the end of the first quarter of this year, the first wave of MyCity is going to be released and by the end of the calendar year we expect our first instance of the city wallet to go out.

CHAIRPERSON GUTIERREZ: Repeat the MyCity piece, when is that ready to launch? I apologize.

CHIEF TECHNOLOGY OFFICER FRASER: By the end of the first quarter of this year.

CHAIRPERSON GUTIERREZ: Okay, and that's still going to be the childcare portion?

CHIEF TECHNOLOGY OFFICER FRASER: That's correct. We have childcare coming up first, but behind childcare there's a cadre of other services that we're looking to incorporate. Part of the strategy is as we renovate systems across the city, instead of building into these silos, incorporate

them into the central MyCity repository and build that way versus trying to randomly pull things in.

CHAIRPERSON GUTIERREZ: Then the crypto wallet, you said by the end of this calendar year?

CHIEF TECHNOLOGY OFFICER FRASER: The digital wallet by the end of the calendar year, we'd have our first instance.

CHAIRPERSON GUTIERREZ: This calendar year? Okay. My next question is, I had a few briefings in preparation for today's hearing, one that I thought was really helpful was with the State Department of Finance, and I'm fully aware that a lot of the crypto exchanges and the way that we all talk about crypto, a lot of it is really relegated to the State and their regulations. Has the City had those conversations with the State to institute a lot of the things or even some of the initiatives or ideas that you just mentioned today and how are those conversations going?

CHIEF TECHNOLOGY OFFICER FRASER: I'd like to reaffirm some of the things that Mayor has said publicly in terms of the partnership between the City and the State. We have great allies in the State. Governor Hochul has been a big supporter of New York

City and helping us get what we need, and we've worked very closely with industry to take a look at some of the regulatory processes that exist on the State level. I think the big thing to note is New York State is an actual regulator so New York State's DFS is the one that issues the BitLicense and they're the ones that can control who can emerge into the space in New York, and we've worked very closely with them in looking at that process.

At the beginning of the administration, we had a lot of conversations with the Governor's office about the speed at which it takes to get a BitLicense issued, and we had a number of conversations around eligibility criteria, around who can apply, and some of those conversations have resulted in some changes on the DFS end including adding additional resources to that office so that they can churn out licenses quicker. We're by no means finished in that conversation, but we want to make sure that we work with the State again to enable New York City to continue to be the financial tech hub for the world, and to do that it requires partnering for smart regulation, not over-regulation.

CHAIRPERSON GUTIERREZ: Right. Do you all have a goal year-to-year of how many licenses would support that goal of continuing to support the City being the financial tech hub?

CHIEF TECHNOLOGY OFFICER FRASER: Right now, what we're trying to figure out in partnership is how quickly we can move them through, and I think a lot of our expectations are set on historic performance. Now if we baseline just based purely on how many licenses have been issued historically and we said, all right, we need to take the number up by 10 percent, 15 percent, 20 percent, the numbers have been so low that it doesn't make sense to chart that way so we've been trying to figure out with industry what challenges do you have in the pipeline, what's the turnaround for reviews, and what can we set as a likely target. As we continue those conversations, I'd gladly provide Council with an update in terms of what's come out of the work that we've done with the State, but at this moment we haven't set any specific targets around number of licenses to be issued.

CHAIRPERSON GUTIERREZ: Is there any other challenge besides the licensing and the length that it takes to get a license? Are there any other

challenges that you're also trying to work through with the Department of Finance?

CHIEF TECHNOLOGY OFFICER FRASER: I think from that perspective, that's the primary issue…

CHAIRPERSON GUTIERREZ: Is just how long it takes?

CHIEF TECHNOLOGY OFFICER FRASER: How long it takes, eligibility criteria, what's required to actually apply for a license and things along that line.

Some of the other things that we're trying to sort out in addition to the regulatory end is how can we build education and dexterity into the space. By dexterity, what I mean is making sure that the talent and the resources that are necessary to grow the industry are native in New York. You've made a hint to this earlier in terms of the Mayor saying that he would like crypto or blockchain-related curriculum in schools. Over the past year, you've seen that we've introduced video game creation-related curriculum into schools, and our hope is that as we continue throughout the year and as we enter into the next school year we can look at adding more relevant tech-related curriculum into the schools.

We're looking to build the ecosystem through increasing the amount of education that's done into the space, also making sure that a regular framework that exists in New York is fair and reasonable and it doesn't create an artificial barrier to entry for any, and then the third part of it is making sure that we continue to have the conversation so that as the landscape changes that we can adjust accordingly.

CHAIRPERSON GUTIERREZ: Thank you. Now, we're going to switch over to blockchain because I get a sense that this is kind of more where the City's focus is. Can you share a little bit, as much as you can share, what is the City looking to do with blockchain applications, how much can you share kind of like where you all are in the process of exploring what are some of the things that we can look forward to, what are some of those conversations or initiatives looking like?

CHIEF TECHNOLOGY OFFICER FRASER: For the City, when we looked at blockchain-related tech, what I'd like to say on that front is that we try to be realistic or reasonable around where we apply these types of technologies. You have a hype-cycle of sorts that comes out when there's new technology that

emerges so you have your peak of inflated expectations, trough of disillusionment, and then you stabilize into the reality of what the technology can actually do. For New York City, we try to pay attention to the use cases that apply to the areas where we have challenges and where our constituents have challenges. A very good example of that is proof of vitality records, life and death records, birth certificates, things along that line, also things like deed and property records. Right now, for the mortgage industry, you have to pay a company to do research to figure out who has the original title or deed for the home so that as the sale is conducted that the real deed and title can be signed and issued to the new purchaser of the home. How good would it be in the world if we had something that you could validate in an instant who owns the property, all the criteria around the property, anyone that has a lien or an entitlement to the property, and then be able to facilitate a seamless transfer within minutes versus taking days and having to pay someone to do it? That’s the way that the City is exploring using blockchain, things that can remove friction from

processes that are highly depending on external parties fulfilling things that should be simple.

Now, beyond that use case of creating a more transparent and frictionless process to access those important records, we're also looking at use cases where we, as I mentioned before, could leverage third-party providers to bridge the gap between what we can do from a financial perspective so looking and having conversations with companies like Coinbase, PayPal, looking at how we can leverage their payment platforms to take intake payments and settle city debt with crypto but not actually holding the crypto ourselves so I think those are two primary questions that we're investigating at the moment.

CHAIRPERSON GUTIERREZ: Thank you. I'm very curious about the deed fraud. I think it's really innovative. At the Council, we have a whole coalition of Members and community groups that are really trying to target this because it is a very real issue, especially in black and brown communities, immigrant communities, and our senior population so have you all gotten as far as kind of thinking through the best way to package that for these homeowners, for example, to secure their deeds,

to kind of prevent that very specific tactic of getting folks to, and it's very predatory, so they get folks unknowingly to sign away their deed. Is there a technical way that you can share with us how using blockchain would prevent that logistically?

CHIEF TECHNOLOGY OFFICER FRASER: I think we're talking about two separate problems. The predatory act of calling into someone or someone that's older or someone that may not be as savvy and getting them to sign a paper that signs their house away. Blockchain can't stop that from happening, but what blockchain can do is that if you're going to purchase a home, instead of waiting to close until you get your title which may extend you a couple of days or a couple of weeks, what it will do is it can create the ability to produce that vital record to that important record in an instant to say oh, I don't have to search for the property record because I now know who owns the home and I validated that with New York City who owns the deed. I think that portion of it is something that we can solve with blockchain. In terms of what you do with deed fraud and like the theft of deeds and things along that nature where someone literally signs a paper and

signs their rights away, we have to continue what we're doing with financial literacy to make sure that people know what they're signing and things along that line.

CHAIRPERSON GUTIERREZ: Sorry. I apologize. My question is about how you all think about giving that information to folks, right, just from a digital divide component, I think that that's fair. I think that makes sense what you're saying, but have you all thought about like how is the best way to package that to our communities so that they have access to these devices so that they understand blockchain, so what is the best way or have you all explored that yet, the best way to empower communities to know this?

CHIEF TECHNOLOGY OFFICER FRASER: One of the things that again I'd reaffirm on the Mayor's behalf is the Mayor has said this a number of times publicly that we are living in a digital world, and day by day that chasm, it's gone from a divide to a chasm wide, and we have to do what's necessary to close that as quickly as possible, which is why in the beginning of the administration one of the things that we tried to focus on is digital equity, working

with many, many on Council, I see Council Member Won here and, of course, Chair, who helped us push the barriers to get things like Big Apple Connect out so that we could get broadband into communities that's been historically left behind from access to those types of assets. In addition to what we've done with Big Apple Connect, we're also looking at programs where we can partner with other entities to provide devices and, in addition to devices, we're working on providing some digital skills and literacy training to help folks re-enter the workforce that may have been setback after the pandemic. I think for us from a digital equity perspective this administration in one year has provided more free access to broadband than any administration had done over the last 10 years. I think we are going to continue to push the boundaries when it comes to making sure that those that historically have not had gets access so that they can continue to grow. New York City, right now we're the 10th largest economy globally, and we manage to be the 10th largest economy when over 40 percent of the people that live in public housing don't have access to broadband. If we could close

that gap down significantly, imagine how much stronger we could be.

CHAIRPERSON GUTIERREZ: I want to acknowledge Council Member Won who has a question and then we'll pass it over to Council Member Palladino for their questions, but we're not done on blockchain.

CHIEF TECHNOLOGY OFFICER FRASER: Oh, no, no.

CHAIRPERSON GUTIERREZ: Settle in. Get comfortable.

CHIEF TECHNOLOGY OFFICER FRASER: I'm comfortable.

COUNCIL MEMBER WON: Thank you so much, Chair Gutierrez, and thank you so much, CTO Fraser and your team for being here.

This is by far one of the most exciting hearings I've been to. Thank you, Chair Gutierrez. Cryptocurrencies, blockchains, and digital wallet, we are really moving forward in this city.

When I think about blockchain, we are talking about a lot of different things, and I don't want people to mix them up, but when we talk about blockchain I think the simplest way to put it,

especially as Contracts Chair, is now we're going to have extreme transparency and accountability to a level that we have not had in our federal government, state government, city government. We hear about extreme spending, like for example, the Department of Defense in Washington D.C. has a gold-ass toilet. Why do we have a gold toilet? I don't know. Where did that money come from? I don't know. Where are our taxpayer dollars going? I don't know. That means, for example, right now Whole Foods or Amazon is currently using blockchain technology to say if I buy this water bottle from their store, I can now use blockchain which they have used to figure out where did my lichee come from within my drink, and you can trace back every single part that has sourced this sale from the moment the lichee was picked from a farm on a tree to the factory which manufactured this tea so that is the level of technology that we're able to think about bringing into New York City and this is something that we need to start to embrace and work towards and so I thank you for beginning this journey.

When I think about blockchain for contracts, and you already know this, but the amount

of excuses that I've gotten from NYCHA, from Parks where they say oh, we have a procurement issue. Okay, we have a procurement issue because of COVID, but where is the issue? What part in this procurement process are you telling me that there's a holdup and with which contractor or vendor is this holdup, and now what you will be able to do is actually identify and, if we wanted to make it public we could have it public and there won't be duplications, there'll be less fraud, etc., so I'm really excited about it, but I'm also realistic and when I think about even the current procurement process that I'm trying to reform at the Comptroller's and the Mayor's Office right now I have a lot of concerns on centralization of data because I think blockchain is amazing but we also have to have all the backend of the ecosystem primed and ready for this so I would love to hear more on the background of what your team is currently doing to prepare our city to even be at a place where we have centralization of data and we actually have updated enterprise licenses for our government where I'm still working off of, I believe, a 2016 Outlook so I would love to hear more about those updates.

CHIEF TECHNOLOGY OFFICER FRASER: I think those are great questions, and we can get into the weeds on this one. I think, as I mentioned before, when you start on day one when you walk in there's a lot of expectations that you have walking in the door in terms of what you want to do, what you need to do, and then you're dealt with the reality of instead of what you want to do like what actually needs to get done now, and to your point a lot of the challenges that we have around data sharing, they're very real challenges, so over the years there was an effort to put in place to have a datalink of sorts within the city, but some of the challenges that we have is that there wasn't an effort to put an MDM solution in place and for those that are (INAUDIBLE) with MDM, whether you're looking at master data management. It's like if I share something with you, we all have a common understanding of what a person is, what a place is, what a thing is, we all understand that this is what it is so what we are in the process of doing right now, and we've put this out on the OTI Strategic Plan which is available publicly, we're working on building a New York City Stat, to a lot of what you said, it's like how can we measure a

constituent of experience that takes place across multiple agencies. A good example of that is like let's say you're in the process of doing construction on your home and you need permits so that you can do a remodel, and the remodel is significant and it requires a certificate of occupancy before you go back into that house. Now, in that process you may deal with a number of agencies, DOB, DEP, DOT, Parks Department, the list can be FDNY for sprinkler inspections, but as it stands right now those experiences are disjointed and there's no way that any of those agencies can look at a person and say where they've travelled across that journey so very similar to what you said in terms of what Amazon is doing, Whole Foods is doing around tracing the lichee that's actually in the juice, being able to trace a transaction back from its origin, like when did this person file for a permit from when was the project approved to how long it took to get the certificate of occupancy and where in each step of the process have they ran into a bottleneck within a city agency. That's the point that we're trying to get to now.

COUNCIL MEMBER WON: Are you able to enforce the agencies to have a centralization of data

because currently we don't have that at all and what are we doing, are we going to partner with AWS or Microsoft Azure, like what are we doing on the backend to actually make this possible because it seems like agencies are doing whatever the heck they want.

CHIEF TECHNOLOGY OFFICER FRASER: I think that I'd use the past tense there, and I'd say agencies were doing whatever they wanted, but at the start of the administration, this is why the CTO role exists now. When we look at agency spend across the spectrum, we have a broad view into what agencies are doing. In terms of establishing a centralized datalink, we are in the process of doing that right now. In terms of the specific partners that we're working with, some of the ones that you mentioned, we are actively working with in that process. We are moving every closer to the point where no matter where a transaction takes place across the city, we'd have a common understanding of whether it's a person, a business, a piece of property, or an object that's responsible to be licensed by the City that we have a common understanding of where that happened and anything around any of those four things. We are in

the process of building a next-generation datalink applying MDM to it so that there's a common understanding and, with every new application that we add to MyCity, that context continues to be broadened around what's happening with the person in the city.

COUNCIL MEMBER WON: Right now, everything you describe, I completely agree and aligned with and that's great to hear, but everything that you are looking at as a perspective from a government administration so is there going to be transparency to the external world where I as a constituent can look at where is my capital project for Parks and why is it two years behind and why is it off-schedule and where did they go wrong in the procurement cycle?

CHIEF TECHNOLOGY OFFICER FRASER: I'd like to provide a little bit more clarity. When you talk about a program like NYCStat, NYCStat is one, helpful from an operational perspective so that those that are helping run the City from the administration perspective has line-of-sight into specific bottlenecks and challenges, but then there's a portion of NYCStat that that same line-of-sight that the administration has being able to make public, and it's a process very much like human development,

crawl, walk, run, jump. We are in the infancy stage, like babies dragging our faces on the floor, trying to get upright, and as you've seen in other models the City has done, things like COMPStat. COMPStat started as an internal tool used to help drive crime conditions down in the city and now you can go online and you have access to COMPStat data real-time. That's the space that we're looking to get to with New York City Stat, and it's not just about one agency's data, but it's about operational data across all the agencies themselves.

COUNCIL MEMBER WON: Okay, that's good to hear just for the record so that we have the commitment of where we're trying to get to because that's what constituents are asking for, and right now we have issues with COMPStat, Council Stat, PASSPort, everything is not in real-time, and the user interface is not something that's easy for folks to use, and there's a lot of issues.

My next question is for blockchain technology, I think there is a learning curve and I think there is an education and awareness component for the general public as well, and is that something that your office has already begun or is that

something in the pipeline to help with blockchain education awareness and digital wallet awareness so that people are learning at the same time as the government is moving?

CHIEF TECHNOLOGY OFFICER FRASER: I think some of the things that we've done historically like hosting the Economic Development Corporation, hosting Blockchain Week to spread broad awareness of who's innovating in New York City itself and what the technology actually can enable, I think that's one example. Partnering with our Colleagues at the Department of Education to look at how we can get this type of information into the pipeline as early as possible is another that we are actively doing and working with higher ed institutions like CUNY to figure out how we can continue to build the workforce and the skills that are necessary for New York to remain relevant is something that we'll continue to do. In addition to that, some of the things that we've mentioned around digital literacy and closing the digital divide or digital chasm includes literacy and upcoming technologies like blockchain so as some of these programs mature, I mentioned the human development process, we are in the process still of

the infancy stage at the mucous membrane, but as it matures we'll gladly keep Council abreast of the changes and the evolutions that we're making in these efforts.

COUNCIL MEMBER WON: Thank you. My last question is about the digital wallet. I personally, as a human being, I don't like to carry anything. You'll never see me with a pocketbook, you'll never see me with anything other than my phone, and I use a digital wallet on a daily basis. I don't want a MetroCard, I don't want anything, I just want to tap my phone so to me there's a big appeal to it, but when I speak to advocates one of the biggest concerns that they have is about surveillance and privacy of individuals who are going be using it for services like EBT, SNAP benefits, and that tends to be a lower income level constituency and for them, because our phones are very easily trackable for location, our spending habits, our patterns of our travel, those are all things that folks who have no choice, right, because it's about agency. I can use a digital wallet because I have the privilege to afford my own credit cards, and I have the privilege of being a citizen so that I can have a bank account, but for someone who

is dependent on EBT and SNAP benefits and other government services who does not have the choice of saying I do not want to have a digital wallet because I don't always want not be tracked, do you have a plan in place on how to protect peoples' privacies and your feedback on the worries for surveillance and will there be an option still when the digital wallet goes live end of this year for folks who would prefer to still have a paper-based payment system?

CHIEF TECHNOLOGY OFFICER FRASER: I think in many cases technology and societal evolution is pushing the boundaries of what will be acceptable so we're in a state where we still have, and I'll give you a very good example, like MetroCards. MetroCards exist today, but for how much longer will they? I think we've all seen the direction where the MTA is going where you now have cashless payment options at the turnstiles so as we continue to evolve from the point where we went from paper passes to tokens, from tokens to MetroCards, now from MetroCards to paperless transactions or digital transactions. I think very similarly government transactions and rendering of benefits have to evolve in that same way. When it comes to privacy, especially on the

global front, New York City has been a leading advocate for citizen privacy, making sure that we are protecting the information of those that provide it and then also that we are being very transparent when that information is compromised or used in any way that's inappropriate or in ways that they don't expect. In the city, we have a Chief Privacy Officer and our Office of Information Privacy that's focused at analyzing these programs as they go forward and working on ensuring that we're only using information pursuant to a rendering of benefit and not using it inappropriately to surveil on people. One of the things that you pointed out is that the communities that typically need access to these benefits are the ones that have limited options in terms of ways that they can participate in other ways, and I think for us, one of the things that we're focused on is innovating smart, innovating wise without violating or compromising on privacy or security, but we want to make sure that those that live in communities that's historically been underserved get access to the maximum amount of benefits they can, and by moving towards a digital wallet, it gives us the ability, as I mentioned, to do incentive matching to

make sure that if you spend a dollar on something healthy, we give you a dollar more. In addition to that, it gives us the ability to see, wait a minute, they're getting SNAP, TANF, they're getting Fair Fares, but they're also eligible for all these other programs that they haven't registered for. It gives us a way to proactively serve that information forward to say hey, we've noticed that you're doing x, y, and z. You're also eligible for this. Are you willing or do you want to apply for these programs? Again, we can get more benefits into the communities that need it. None of these programs are focused around surveillance, and, historically, especially around our Health and Human Services data, we've never put New York City in a position where we've used that data to surveil anyone in any way, shape, or form beyond rendering benefits, and we continue to keep it that way.

COUNCIL MEMBER WON: For the record, could you put on the record to confirm that New York City would not sell the data to any third parties collected?

CHIEF TECHNOLOGY OFFICER FRASER: We have no intention to sell the data to any third parties,

and I think that that's never been a practice that the City has actively engaged in.

COUNCIL MEMBER WON: Will there be a warrant needed in the case that NYPD wants data on a specific individual who receives those benefits currently?

CHIEF TECHNOLOGY OFFICER FRASER: I'd be very, very careful when we're talking about things around the public safety space, and the reason why I say that is what we want for those that live in the city is a fair and equitable experience. We want to make sure the people get the services and the support that they need, and I think when it comes to things like rendering food benefits and using a digital wallet to get food, under any circumstance where there is a need for that sort of information from a law enforcement perspective, appropriate channels will be rendered as they are today where warrants are served, so on and so forth, and information is produced pursuant to a warrant. I think that that practice will continue. In the Health and Human Services space, it's a broad ecosystem of things including things that edge into the mental health space so I would (INAUDIBLE) what I just said around

rendering benefits, use of digital wallets, things along that nature, but I will not say anything beyond that scope.

COUNCIL MEMBER WON: Okay, because I think the common citizens who are concerned want to know that they will have the same protections as they would with or without a digital wallet. That is something that has been coming up, and there's also rumors about social aspects to the digital wallet. Right now, I know that California already has this digital wallet in place, and I'm sure there are other major cities and states that already have this in our country, but I don't know if this is true, but I heard that there were aspects where you consider people's social behaviors on folks who receive these benefits to receive points or extra benefits, for example, like if you want more money for your SNAP, etc., and I don't know if this is true, but if you could address it, we would appreciate it because people were comparing to the CCP government in China where they have a surveillance system or some sort of social contract connected to a digital wallet where the government will reward you for positive behavior and then they will also use it to punish you for

behavior that they think is not acceptable. For example, during COVID-19, Xi'an (phonetic) and other cities in Chinese, they used the identifications on a digital wallet to forbid people to travel outside of the city for X reasons, even if they had or had not had COVID because they wanted to run to another city out of safety reasons, but they said you have these negative behaviors on your record so therefore you may not travel so could you say if that is something that you all are considering or not?

CHIEF TECHNOLOGY OFFICER FRASER: Sure thing. I think punitive actions based on the use of a digital wallet is something that we have never considered, and I think that when you look at, and again, the societal differences between what's acceptable in the U.S. and what's acceptable in China are very, very different and then we have a number of safeguards and controls that extend beyond what government can actually do that prevents us from using data in that sort of way, but the incentive-based behavior in terms of ensuring that we can reward healthy behavior, I mentioned this in the beginning, right. We want for New Yorkers to have the establish quality of life that they can including

empowering them to make the decisions that they want to make, but if someone makes healthy decisions that can reduce mortality, that can increase lifespan, that can increase overall health, having programs where we incentive better behavior, that's something that we're actively interested in. The Mayor has gone out and publicly said how much of a difference that lifestyle changes from food has made on his personal life. We've done a number of changes when it comes to food distribution in our public school systems to make sure that our students have healthier options to eat, and we want to continue to make sure that as people make decisions we can reward those that are making better or more health-conscious food decisions where possible, but there's no punitive aspect of this, where we're looking to take that information, mine it, and weaponize it against anyone. That's never been the intent of what we…

COUNCIL MEMBER WON: Thank you for clarifying. Thank you so much CTO Fraser and thank you so much Chair Gutierrez.

CHIEF TECHNOLOGY OFFICER FRASER: Thank you.

CHAIRPERSON GUTIERREZ: Thank you, Council Member Won. Next for questions we have Council Member Paladino.

COUNCIL MEMBER PALADINO: Thank you. How are you this afternoon? Everybody's good?

CHIEF TECHNOLOGY OFFICER FRASER: Good, good, good. How about yourself?

COUNCIL MEMBER PALADINO: Good, good. Okay, let me first start by saying the blockchain in its purest form is great. Let me then move on to government intervention with my money. I have a little bit of a problem with that. I don't like being monitored, ever. I think it takes away from our freedoms. I think it's awesome what you want to do with records and getting things done speedily with working in this business that we're in with all our different, DOB and Housing and everything like that. In that form, it's excellent, but when you start to talk to me about what I could buy, healthy drinks, I don't really care where that drink came from personally. I don't care about its origin. I don't think we should really care. What I do care about is being tracked. I don't like the idea that you're going to monitor people's spending habits, whether

they choose to buy healthy foods or whether they choose to buy a bag of potato chips. At what point, once this actually gets into its form, do you have the ability say cut people off? In other words, if you're controlling our money, right, am I on par with this or am I going off a little bit? Talk to me. Educate me blockchain I'm confused, really confused.

CHIEF TECHNOLOGY OFFICER FRASER: No worries. I seek to enlighten. When we look at programs like this, what we're talking about is let's say every month you get 500 dollars in benefits.

COUNCIL MEMBER PALADINO: 500 dollars in benefits, okay.

CHIEF TECHNOLOGY OFFICER FRASER: That will not change. Your 500 dollars in benefits will be your 500 dollars in benefits, and you can use it any way that you choose to, but when we talk about creating an incentive around better behavior, instead of having 500 dollars in benefits, let's say you spend that money towards healthy eating or other healthier lifestyle choices in where you distribute that money, being able to give you incentive points to say all right, instead of having 500 dollars a month based on how you distributed, you now have 550

dollars a month. Your entitlement for cash in terms of what you get will always be your entitlement. You can use it the way that you want. The other thing I should mention with programs like this is seldomly do we ever issue a program like this that isn't opt-in so if you don't want to opt in to taking part of an incentive-based program and you just want to maintain your spending the way that you maintain it and you don't care about any parts of it, parts of how we do deployments like this is making sure that you have the option to do what it is that you want to do.

COUNCIL MEMBER PALADINO: Okay. I want to ask a question. Can you please explain to me the difference, I have to read my questions because I don't usually read off of paper, everybody knows that, can you please explain to the difference between crypto blockchain, and recordkeeping blockchain?

CHIEF TECHNOLOGY OFFICER FRASER: Okay. When you look at crypto blockchain or when you look at crypto as a whole, crypto, I'd like to step aside and think about it as like a token currency so when you look at something like a Bitcoin, Bitcoin is like the concept of a tangible dollar, it's like a U.S.

dollar, you have the digital equivalent which is like Bitcoin. Now, you step to the side and you look at blockchain, the underlying technology that facilitates the transactions for the distribution and disbursement of things like crypto, the foundational technology is built to enable broader sharing of records. Basically, any time that something happens, and I guess the best way to put it is like think about your personal bank. At your bank, you know what you have in your bank account, your bank knows what you have in your bank account.

COUNCIL MEMBER PALADINO: Yes.

CHIEF TECHNOLOGY OFFICER FRASER: All right, and when you do a disbursement like you write a check and it goes to someone, the person that receives the funds knows that you sent them money…

COUNCIL MEMBER PALADINO: Yeah, peer-to-peer is fine. That I have no problem with.

CHIEF TECHNOLOGY OFFICER FRASER: Now with a distributive ledger of technology, everyone would know or the moment that you gave someone a dollar or you gave someone some amount, the way a distributive ledger technology works is that every one that's a part of the chain, every block on the chain that's

written, that a dollar left your account and went somewhere else. Now, anyone that goes to reference your account to say, all right, you wrote me a check for 300 dollars. Instead of it having to send that check to your bank so that your bank can validate that you have that money in your account, with technologies like blockchain, the moment that that check is issued someone could look and say, wait a minute, they wrote a check for 300 dollars but based on what's available in that account, it's only 250 dollars, rejected because it's an invalid transaction so it creates broader transparency so that when a transaction occurs, there's a more common understanding of what the real truth is versus having one single source of truth.

COUNCIL MEMBER PALADINO: Okay, so basically what I want to know also is title searchers. Way back you said, so saying that title searchers, the times will be reduced when we do title searching?

CHIEF TECHNOLOGY OFFICER FRASER: Yeah, so right now when you do title searches, you have to ensure that who actually owns the title takes time with usually private entities working with the record

holder to ensure who has the actual real title, who owns the property, so on and so forth. By leveraging a technology like blockchain, just like the example I gave with the bank account, in real-time you should be able to pull who owns the property, here are all the attributes around the property, here's the last and here's the history of all the sales transactions that occurred, and anyone that may have a lien on the property. By moving to a technology that's more transparent, it gives you the ability to validate in real-time versus going through a process where someone has to manually do that.

COUNCIL MEMBER PALADINO: Okay. What are the recovery and redundancy protocols if we have a successful cyberattack on a centrally based blockchain system? What do we do?

CHIEF TECHNOLOGY OFFICER FRASER: In cases like that, the reason why blockchain is such a great technology is in terms of redundancy, you don't have a single source of truth. You have multiple sources of truth, and in the event of a compromise or if something gets hijacked, in order to hijack information or to misuse that you have to corrupt every block on the chain where that information is

written which is significantly more complicated than doing it in somewhere where you have a single source of truth. Traditional exercises where something is held hostage or information is encrypted and you're locked out, it becomes significantly harder when you're leveraging a distributive ledger-based technology. The think I'd like to point out is although there's a lot of risk that we hear with things like blockchain and we hear about companies that have had issues, places like FTX, I think it's important to note that even in situations like FTX the technology never failed. The problems that we had was misuse of funds and it was a people/process problem, not a technology problem.

COUNCIL MEMBER PALADINO: I think what really bothers me the most, and I don't know if it bothers anybody else, going back to the original. It just seems like there's so much government intrusion right now. I get it. Bitcoin, I'm trying to understand it. I'm trying to wrap my head all of this, but as soon as I hear about things being done on the phone for everything, people knowing personal stuff, taking the human aspect out of dealing with people one-on-one, everything goes through a

mechanical source, the human element is being lost here, and that, I think really, is what troubles me the most. I know we're tied up in a lot of red tape and a lot of weeds that we have to go through, but I look at it as, in a lot of cases, a personal intrusion on people's privacy. There's privacy issues that I really truly believe in time, everything sounds great in the beginning but 5 and 10 years down the road, this is like something out of a science fiction movie, and I don't like it. I mean I really don't. I feel as soon as we give an inch, we take a hand, and as soon as we take a hand we take an arm, and then before you know it you're all in and you don't know how you got there. Now, we're at the very beginning stages of what sounds like could be an absolutely wonderful program setup, this new way of doing things, but, once again, it comes down to please, I'm begging you, please take the time that's really required so that we could do things the right way. We've seen this city jump off bridges here with different legalizations of different things without infrastructure in place. I think that troubles me the most. We pass things through too quickly. We don't put the spine with it. We don't put the foundation

in. It troubles me terribly when I can go to the store and I want to buy something, here, I smoke cigarettes, I do, I smoke, and I don't mind the fact that I smoke, and if I control my smoking that's my business. If I'm having a bad week and I smoke a pack of cigarettes a day and I have to buy another pack in one day or whatever it is, I don't want that to be anybody's business. Now, it's out in the world, everybody knows Vickie Paladino smokes. The bottom line is I don't want an invasion of privacy. I really don't.

CHAIRPERSON GUTIERREZ: I know, but now everybody knows.

COUNCIL MEMBER PALADINO: I don't care. It doesn't matter. This is what it's all about. It's about freedom. I'm truly worried about how much of our information we're turning over to government. How much? I don't think it should be anybody's business in this room what my personal banking habits are. I just don't, and I don't think it should be Member Powers' or Gutierrez, nobody. We're crossing a bridge here that I really think everybody needs to be aware that all this technology has served us well and to go a bit further with it, fine, but once we start to get

into our everyday lifestyles and what we do as individuals, that troubles me tremendously, and I think that's really basically what I'm upset about or what I fear, let me use the word fear, and I don't get scared easy, but this bothers me, it really does, and maybe we could have a private conversation about so that you and I could chat and I could really better understand it. I had it explained to me. I just got the agenda last night so I wasn't really able to go over all of this and I'm highlighting and I'm doing this and that and somebody who is very knowledgeable was giving me the background, but an hour into New York, into the City here, for me to get my wheres and what-fors, I have not, so I'll be very honest with you. I'm sitting before you as a blank slate. I'd like to be filled in on it, and I'd like to know better what this actually entails. What I've heard here so far today makes me nervous, and, like I said, I think if we just understand that everybody's entitled to a certain amount of privacy. We'll talk more.

CHAIRPERSON GUTIERREZ: Thank you, Council Member.

COUNCIL MEMBER PALADINO: Thank you.

CHAIRPERSON GUTIERREZ: Of Course. Thank you for participating. I want to acknowledge Majority Leader Keith Powers and he's up for questions.

MAJORITY LEADER POWERS: I will not be asking for your banking information. That's the good news.

COUNCIL MEMBER PALADINO: I know, but it will become public record. That's what I'm (INAUDIBLE) I mean, not that I care about mine. I'm talking about the 9 million other people that live in this city. Why should everybody know everybody's move?

CHAIRPERSON GUTIERREZ: Keith was trying to be cute. Don't pay attention to him.

COUNCIL MEMBER PALADINO: Oh, no. I love him. He knows that, but my point is it just makes me very nervous.

MAJORITY LEADER POWERS: I am sorry I missed your testimony. I haven't had the opportunity to catch up on it, and I appreciate the Chair for doing this.

I have questions on a totally different topic, but I'm probably not going to see you guys until Budget so I wanted to get an update on the 5G

proposals that include a number of districts including mine on the Upper East Side. I know we've had an opportunity with your staff to get briefed a bit on it. We have asked for the administration and of course your agency to take a look at the proposal and wanted to get an update on it in light of finishing the feedback period now, what are he next steps, are there any changes at this point to deploying on the Upper East Side. Second is a lot of my constituents have been asking (INAUDIBLE) have been asking why you guys are pursuing the large towers versus the smaller versions that seemed to be happening in Midtown, the fixtures on the light posts and things like. If you could give us an update on that because I'm getting a lot of calls about it from my constituents. Totally different topic.

CHAIRPERSON GUTIERREZ: Commissioner, can you bring in your mic a little bit? I really can't hear. I apologize.

CHIEF TECHNOLOGY OFFICER FRASER: How about now?

CHAIRPERSON GUTIERREZ: That's better. Thank you.

CHIEF TECHNOLOGY OFFICER FRASER: I've never been accused of being quiet before.

CHAIRPERSON GUTIERREZ: It's the old-timey acoustics in here so it's really hard for me to hear.

CHIEF TECHNOLOGY OFFICER FRASER: I was just joking with you. Certainly, we'll get to that, but before we get to that I'd just like to say thank you very much. I will gladly take you up on that offer. I'm in the business of making believers, and it's like technology is seldomly the problem, its application and making sure that we have the right safeguards so I want to make sure that we connect on that front and I'll gladly do that.

COUNCIL MEMBER PALADINO: (INAUDIBLE) Like I said, (INAUDIBLE) I came here today to (INAUDIBLE) I'm open to (INAUDIBLE) and I don't understand a lot so (INAUDIBLE)

CHIEF TECHNOLOGY OFFICER FRASER: No problem.

On to the 5G space, I think there's a number of things that we are seeking to do as an administration, and one of those things is ensuring that along with equity and making sure that those who need access get access, it's also building a pathway

so that our infrastructure doesn't become decrepit, and as technology evolves, New York City gets left behind. When we look at our efforts around 5G and what we're doing specifically in this space, there's a number of challenges that we have, especially with infrastructure across the city and what we're trying to do is make the process for deploying new technologies the least destructive as possible. Now what we're looking at with, and I assume when you say 5G it's more than just the broader 5G ecosystem, it's more so about the Link5G kiosks. Is that correct?

MAJORITY LEADER POWERS: Yeah, that's correct. The new (INAUDIBLE) towers.

CHIEF TECHNOLOGY OFFICER FRASER: With the Link5G kiosks, the key here is the City had gone out over the past couple of years and put out about 2,000 of the Legacy Link4G which is the small units. The Link5G towers which are the ones that have the dome that are the same size as a light post, the reason why the design had changed is one, we put broader antennas into the devices so that they can distribute that free broadband much further, but, in addition to that, the towers will actually serve as a home for telecom equipment for the major carriers so that they

can continue to build 5G coverage out across the city. Now, the specific design decisions around the tower for residential use cases versus commercial use cases, we went through a number of iterations, we went through a number of discussions with the Public Design Commission to come with consensus on where we could go forward. For commercial use cases, you have the ones that you're very familiar with. For residential use cases, we only have a small portion that we can put out as a proof of concept. We're continuously working with the industry to see if there are other alternatives that we could put out for residential use cases, but at this moment, beyond what we're already doing, we haven't identified any other secondary designs that we're going to go with but we are evaluating.

MAJORITY LEADER POWERS: And there's also like the case of location specific, where why in one location versus another. When you say residential, you mean in residential neighborhoods, is that what you mean?

CHIEF TECHNOLOGY OFFICER FRASER: Correct.

MAJORITY LEADER POWERS: In Midtown, in my District also, it seems to be, and you can correct me

if I'm wrong, that you guys are relying on some light-pole-fixture-related smaller models to be able to do that. Am I incorrect about that? I recall seeing that there was going to be not the kiosks but ways to distribute that are going to be attached to right-of-way light poles and things like that.

CHIEF TECHNOLOGY OFFICER FRASER: There are a number of deployment types for 5G equipment. You have carriers that may make a light pole reservation and they may choose to affix their infrastructure to the side of a light pole. What Link5G does is it creates a landing place so instead of waiting for carriers to go out to light poles, they can just go to the towers and deploy their technology within the towers themselves.

Around placement of where the devices go, it's driven by both equity and demand so in areas like the Upper East Side where it may be less of a necessary because more folks may have access to broadband, there are individuals that come from areas that travel to places like the Museum of Modern Art that when they come out of the museum, they may not have access to any broadband at the street level. They have may have a device but no access to anything

so we have to make sure that when we put this equipment out we put it so that as individuals travel around the city they have access.

MAJORITY LEADER POWERS: I'm not arguing that they shouldn't exist. I'm not arguing that they shouldn't exist. It's, I think, where and how and try to get all the information we need, but I do wonder, like obviously a lot of the opposition including my own concerns about it are like you walk down the street, I think every New Yorker stops and looks at the sheer size and monstrosity of these new towers and it seems to be because of the agreement to put the multiple carriers into one location, but there's another option, you're saying, which is to let the carriers go out and put them using the fixtures and using the right of way so why don't we just continue to rely on that and do a smaller version of the kiosks for the broadband and then you let the carriers do what they need to do and what they're doing ordinarily in other places?

CHIEF TECHNOLOGY OFFICER FRASER: We are not removing that as an option because carriers can still apply for light poles and put equipment where they need to put equipment, but what we're doing in

deploying the kiosks is one, expediting the amount of free broadband that's available at a street level, and also expediting the deployment timeline so instead of waiting for a period or being able to lose opportunity to deploy your equipment on a specific pole because someone else had made a reservation, we now have a universal landing spot where all three major carriers can deploy their equipment…

MAJORITY LEADER POWERS: And they'll pay for access to that?

CHIEF TECHNOLOGY OFFICER FRASER: That is correct.

MAJORITY LEADER POWERS: I mean it does feel like part of that is a financial arrangement that (INAUDIBLE) them to be able to help fund Link and the expansion of it as well.

CHIEF TECHNOLOGY OFFICER FRASER: Exactly.

MAJORITY LEADER POWERS: I think people have identified it as being maybe the motivating force here when there are other options that are available. Anyway, I'll follow up with you. I don't want to take all the time on this hearing, but I thank Chair Gutierrez for giving me time.

CHIEF TECHNOLOGY OFFICER FRASER: I appreciate the question, and I look forward to the discussion.

MAJORITY LEADER POWERS: Thank you.

CHIEF TECHNOLOGY OFFICER FRASER: Thank you.

CHAIRPERSON GUTIERREZ: Thank you, Majority Leader. All right, thank you. I have a few more questions related to blockchain, and I appreciate all the time and the comprehensive answers. I wanted to understand, kind of going off of what Council Member Paladino mentioned, just kind of like this is complicated stuff, right, and it's also happening around us as we're learning about it all at the same time so I want to ask if there are resources that exist for any senior members of the administration to learn more about crypto and blockchain technologies, like how are you kind of talking or what is the best way or resources that you are using to kind of like talk to folks about blockchain and the agency and specifically folks that are leading some of these initiatives? What is the best way that you connecting those resources to your own team and your own staff?

CHIEF TECHNOLOGY OFFICER FRASER: When we look at a broader set of tech priorities across the city and where agencies are investing and we identify opportunities where this sort of technology could be useful, the way that we typically do that is we bring in the agencies that have those specific workstreams and we have conversations around what the intent, what you're trying to accomplish and illuminate them on some of the things that are possible using that specific technology.

Beyond that, in terms of broader awareness, working again with our partners at EDC, working with the Department of Education, and a number of our other partners to get information around what blockchain is, what crypto is, and what you should look for, that's stuff that we do on a day-to-day basis. In addition to that, we're looking to bring in two additional resources that are going to focus on digital assets and blockchain-related technologies to help us build pathways for both public information and internal information around how we plan to apply these technologies for city use cases.

CHAIRPERSON GUTIERREZ: Can you share, Commissioner, if you have any knowledge of the previous administration doing anything around blockchain or blockchain education or blockchain applications?

CHIEF TECHNOLOGY OFFICER FRASER: Unfortunately, at this moment, I cannot attest to specific activities outside of the Economic Development Corporation's work for Blockchain Week. Like I said, it's existed for the better part of the last decade, and, outside of that explicitly, there isn't something that I can point to.

CHAIRPERSON GUTIERREZ: Okay. I want to now raise questions about the positions that u mentioned in your testimony, and you can confirm if we have this right because we pulled this off the website. OTI has a listed opening for Policy Advisor in Digital Assets and Blockchain. Can you explain a little bit or clarify what the role of this Policy Advisor is?

CHIEF TECHNOLOGY OFFICER FRASER: One of the things that I think we often get stymied by, and I mentioned this, sometimes over-regulation, creating policies in areas where we don't understand and then

also having initiatives that are scattershot so instead of having initiatives that represent a broad set of use cases from a technology like blockchain championed in different agencies, having individuals that are capable of aligning the policy across the city, creating strategies around where we will invest in managing the deployments of those related technologies and the efficacy thereof. It's something that's very important for the administration. When we put the posting up, one of the things that we look for is finding someone from industry that has done this work in a major way and that's capable of looking at the key success factors in driving that for the government-specific use cases. That's the key behind the roles that we are looking for. A champion or champions across the city that can lead these efforts for us.

CHAIRPERSON GUTIERREZ: When was the posting made available?

CHIEF TECHNOLOGY OFFICER FRASER: The posting went out I believe in the mid-part of last year.

CHAIRPERSON GUTIERREZ: Okay.

CHIEF TECHNOLOGY OFFICER FRASER: We've conducted several interviews, and we're still trying to find the right individuals to fill the role.

CHAIRPERSON GUTIERREZ: And it's two positions, the same role?

CHIEF TECHNOLOGY OFFICER FRASER: That is correct.

CHAIRPERSON GUTIERREZ: Okay, and they've not been filled?

CHIEF TECHNOLOGY OFFICER FRASER: No, not yet.

CHAIRPERSON GUTIERREZ: Okay.

CHIEF TECHNOLOGY OFFICER FRASER: But those that are interested and that are watching, they should apply.

CHAIRPERSON GUTIERREZ: I think this is an opportunity, right. You mentioned it a little bit, but what candidate are you looking for?

CHIEF TECHNOLOGY OFFICER FRASER: We're looking for someone that one, has the experience in industry working on products or programs associated with this, those that understand foundationally how the technology works, and then ones that have product or program management experience leading those

technology initiatives or product initiatives at large. For us, it's more than just finding someone that has a general awareness of what blockchain is or a general awareness of what any specific product is, but it's someone that's capable of taking that information, applying it, and helping us drive initiatives forward.

CHAIRPERSON GUTIERREZ: Would these two Policy Advisors be a part of the Blockchain Committee or working group?

CHIEF TECHNOLOGY OFFICER FRASER: They would be.

CHAIRPERSON GUTIERREZ: They would be? Would they also be talking directly to agencies about kind of a lot of the stuff that you mentioned today, just how to better integrate all of these services? How involved do you see them in the evolution of the MyCity app or the digital wallet for example?

CHIEF TECHNOLOGY OFFICER FRASER: I see them as being a significant part of those efforts. When you say speaking with agencies, anyone that's looking to invest in these sort of technologies and looking to leverage them, I think as a City we have to have a cohesive strategy around what we're doing

and it can't be scattershot. Making sure that we have resources that are positioned to hear from agencies where they're looking to spend, hear from agencies on the use cases that they're looking to deploy, being able to bring that up to the seniormost level and being able to rationalize where we're going to go first, I think that's critical, or else we'll find ourselves in the position where we're investing in things that will have short shelf lives.

CHAIRPERSON GUTIERREZ: The other position that we came across was under HRA. It's a position, Director of Security Operation Center Specializing in Blockchain Technology. I know that's with a different agency, but do you know about the ongoing of any blockchain-related projects by HRA or whether they're planning to launch any?

CHIEF TECHNOLOGY OFFICER FRASER: A lot of the positions that are posted, just like the Policy Advisor position, are in anticipation of what's to come…

CHAIRPERSON GUTIERREZ: That's what we're doing here.

CHIEF TECHNOLOGY OFFICER FRASER: Yeah, and we can't wait until we actually start building

products or building dependencies to start to find the talent, and, given the difficulty or the competitiveness on the talent pipeline, especially in the technology space, we're looking to create a foundation across the city of capable people that can help lead the next generation of investments from a tech perspective, and that's (INAUDIBLE)

CHAIRPERSON GUTIERREZ: Okay. Do you have a sense if HRA is planning on launching a specific project related to blockchain?

CHIEF TECHNOLOGY OFFICER FRASER: I think as we speak about vitality records, as we speak about information sharing, as we speak about broader transparency around creating incentives in behavior, there's a number of areas where blockchain and the specific benefits that come with blockchain-related technology can be used in that space, and I think that those are the primary drivers for identifying resources that are capable of doing that.

CHAIRPERSON GUTIERREZ: In that event, would OTI have oversight?

CHIEF TECHNOLOGY OFFICER FRASER: Yeah, if it's technology in New York City, there's no

technology in New York City where the Office of Technology and Innovation doesn't have line of sight.

CHAIRPERSON GUTIERREZ: Okay. Can you share if at all blockchain is currently being implemented in any city agencies or operations?

CHIEF TECHNOLOGY OFFICER FRASER: Beyond the pilot that we mentioned at the Department of Finance that we're looking around title management, deed management, and beyond some of the things that we've done already. As the Council is aware, the Mayor took his first three paychecks in crypto. What we're doing around managing payments as a pilot. In those areas, those are the areas where we're explicitly actively working on projects or products. Beyond that, I think as the landscape evolves, we'll gladly keep Council aware.

CHAIRPERSON GUTIERREZ: Great. Can you speak a little bit more about, you mentioned just a minute ago about the incentives for healthy behavior, can you explain a little bit more of what that is and a timeline or a status?

CHIEF TECHNOLOGY OFFICER FRASER: Conceptually, that's what we'd like to do. The timeline and status is fairly dependent on

integration and complexity. Right now, the first phase of what we're looking to accomplish with the digital wallet is focused on incentives that are exclusively rendered by the City so when you think about Fair Fares and subway-related incentives, those are things that the City does cash disbursements on so being able to take those types of disbursements and move them into a centralized digital wallet, that's something that we're looking at in the near term. Beyond that use case, SNAP, WIC, TANF, other benefits that are rendered at a federal level and administered by the State, we are evaluating pathways to get there, but we're not at that stage yet so I can't tell you a specific timeline beyond the fact that by the end of the year we will have a version of the digital wallet and it will be used to fulfill benefits that are issued and managed by the City.

CHAIRPERSON GUTIERREZ: Thank you. I want to just pull back on digital ID again, and I know Council Member Paladino brought in some concerns, but if you could just share with us on the record regarding digital ID that's going to be implemented for city services, who should have access to that

data and would the ID be built on a public blockchain?

CHIEF TECHNOLOGY OFFICER FRASER: I think that in terms of where the ID will be built, I cannot confirm any of that at the moment, but in terms of who should have access to the data, we want to ensure that people that need access get access and it's controlled in the ways that they're typically controlled today. Those that work in the Health and Human Services space that need access to data, they get access, but the folks that need access to Health and Human Services data are a specific group, a part of a specific set of agencies that are focused on a specific mission, and that information is controlled and isolated so that those that work on the operational end or the public safety end doesn't inadvertently get access to that type of information so I'd say the typical ring-fencing that's done today around operational need and business need is what will continue to persist into the controls that are placed around digital IDs.

CHAIRPERSON GUTIERREZ: Are you exploring biometric technology, like facial recognition or iris scans or fingerprints to be used with digital IDs?

CHIEF TECHNOLOGY OFFICER FRASER: At this moment, there aren't any active plans for using biometrics. The one exception that I will point out is that on your smartphone right now, on your iPhone or your Android, each one of those devices has a security enclave so you open up your phone, you want to use Apple Pay, your face scans, those are capabilities that are intrinsic in the device. None of that biometric data is shared with the City. It's just something that's used to secure your identity. Outside of those use cases which are, again, intrinsic in the devices, there are no exclusive plans on that front.

CHAIRPERSON GUTIERREZ: Okay. Thank you. Next, I just want to ask a question on behalf of the Public Advocate's Office. Has OTI considered contracting with a blockchain technology contractor at this point?

CHIEF TECHNOLOGY OFFICER FRASER: In general, we have considered using entities that have native technology that operates on blockchain and those that have experience in this space. In terms of contracting vehicles, we would take advantage of any of the existing contract vehicles that we have,

whether it be federal GSA, state OGS, or one of the city requirements contracts, and, from there, anything of significant size or scale would require RFP/RFI process for us to do, but beyond broadly, there's no…

CHAIRPERSON GUTIERREZ: There's no conversations, there's no…

CHIEF TECHNOLOGY OFFICER FRASER: Active.

CHAIRPERSON GUTIERREZ: Active? Okay. Great. I just want to be able to get this in a conclusive way because I think that the purpose of this hearing was to kind of introduce what the City is doing, kind of like how the Council wants to work with OTI, for example, and I just want to be able for you to summarize a lot of what was raised today regarding kind of what is the reality, what is the power of blockchain, and how it can continue to empower New Yorkers, and where we are, the reality of it, and I say it because we were here maybe around the same time last year talking about the MyCity app and the launch date has been pushed back a little bit. I remember Council Member Brewer gave you a little bit of a hard time saying I'm a nonbeliever and now we're hearing that the MyCity app will be

ready by the end of this first quarter so I just want to be able to have you summarize a little bit about, not just the MyCity app, and how confident are you in the launch of this by the end of this quarter?

CHIEF TECHNOLOGY OFFICER FRASER: On the launch of?

CHAIRPERSON GUTIERREZ: The MyCity app.

CHIEF TECHNOLOGY OFFICER FRASER: Oh, I'm very confident.

CHAIRPERSON GUTIERREZ: Have you seen it? Have you tested it out? Have you looked at it? What's the color scheme? Give me some details.

CHIEF TECHNOLOGY OFFICER FRASER: We've seen it, we've tested it. Not only have we tested it, but we have had New Yorkers test it. The way that we've done our testing and our design, it's human-centric, so those that's already applied for childcare benefits, as they go through the pipeline, we asked you just went through that, that was a little cumbersome, can you test this out and give us feedback based on this thing that we're designing and tell us how you feel about it. We've incorporated feedback from those that are actively receiving

benefits or that have applied for benefits and we've incorporated it into the new portal.

Now, the product is built. It's currently being tested and validated. Like I said, with New York City we can't afford to put out something that's half-baked. We have to make sure that it's the right thing, and if that means pushing it by a day or a week or a month, that's what we'll do.

CHAIRPERSON GUTIERREZ: Or a whole half of a year?

CHIEF TECHNOLOGY OFFICER FRASER: No. We had a plan. The initial plan was to go live by…

CHAIRPERSON GUTIERREZ: Fall. You gave me a season.

CHIEF TECHNOLOGY OFFICER FRASER: November of 2022.

CHAIRPERSON GUTIERREZ: Mmhmm. We are now in February of 2023, which is a moderate three-month slip, and when I say end of second quarter, it could be live as soon as…

CHAIRPERSON GUTIERREZ: No, you said first quarter.

CHIEF TECHNOLOGY OFFICER FRASER: I mean end of first quarter, it could be live as soon as

next week or by the end of March, but certainly within the next couple of weeks it will go live.

CHAIRPERSON GUTIERREZ: Okay. I'm excited. I'm looking forward to what it looks like. Related to the digital wallet, is that also, just to confirm, you said we could potentially see it by the end of…

CHIEF TECHNOLOGY OFFICER FRASER: The year.

CHAIRPERSON GUTIERREZ: The end of this calendar year?

CHIEF TECHNOLOGY OFFICER FRASER: Yes, so we've actively pursued a contract which is on the cusp of being issued.

CHAIRPERSON GUTIERREZ: Was there an RFP for that?

CHIEF TECHNOLOGY OFFICER FRASER: There was an RFP for it.

CHAIRPERSON GUTIERREZ: Okay. Can you share any information about who's designated?

CHIEF TECHNOLOGY OFFICER FRASER: I cannot do that until the contract is issued, but what I will do is we can follow up offline and we can go through the details of what was put out.

CHAIRPERSON GUTIERREZ: Okay. Yeah. I would hope that a lot of what we're raising today just about security and all that stuff is being implemented or is worked into the expectation of the RFP, and I'm sure we will convene again before the launch of that. I'm also looking forward to that.

Is there anything else, Commissioner, that you could say tied to, I think some of the remarks that the Mayor has made, I think he has been very enthusiastic about the future of crypto, about New York kind of being that mecca of welcoming these exchange companies. I know, for example, he made it very public that the first few paychecks were then invested into crypto. Can you share if that's something that he's still very much looking to do and how we can look to him as this leader? I think it's important for us to get a sense of he's making these comments, you are as well, and how can we have firm commitments and firm timelines? Again, knowing that this is fluid, but I think it's really important we don't have this large window, there's no guarantee so if there's anything that you could speak to whether or not the Mayor is still very much championing this, if he's still looking to invest in crypto, and how

much trust can we have about these timelines that you are sharing with us? I want to be a believer, Commissioner. I know that you say this, but we haven't been able to fall within those timelines.

CHIEF TECHNOLOGY OFFICER FRASER: What I'd say is how much the Mayor believes in this like you said the Mayor made commitments. As the Mayor ran on the platform to get stuff done, that's what we're here to do, get stuff done, and the reality of the situation is in order to get some stuff done we have to create priorities of where we focus. In some of the things that we tackled in the first year, digital equity, public safety, some of the things that we've pushed on the technology boundaries, those were necessary to come before some of the things that we're working on now. I think just to reaffirm the Mayor's commitment, when it comes to helping those that are a part of the unbanked and underbanked community, but getting access to the information so that they build wealth and pathways out of poverty, about leveraging new and emerging technologies in the city and letting New York City continue to be the fertile ground for technology, the Mayor's all in as I am all in, and when I look at it, New York City

over the past couple of years has maintained its position as the number two when it comes to startup tech across the global landscape, and we plan to push that further and eventually become number one. The Mayor has no shortage of vision and insight when it comes to the possibilities of what we can do. I think for us, the key is, again, emerging in ways that only make sense and that are measured. We don't want to be like other cities that emerge and they create these tokens and these currencies and then all of a sudden they're defunct. Whenever New York City is in the market and it's in the game, it's in the game for the long-term, not for short-term victories so from this administration, you'll continue to see a commitment for doing not just the thing that we're going to do, in some cases it won't be the fastest thing, but it will be the right thing for the people of the City.

CHAIRPERSON GUTIERREZ: Thank you. This is a serious question. What are some of the things that, you just alluded to it, if it doesn't work, it doesn't work. We don't want to invest in something like a coin that didn't necessarily work in Florida. What are some of the factors that determine whether blockchain technology is a good fit for a project and

what are some of those things where you're saying absolutely not, like this is not going to work, or some of the things that you've learned throughout this process that you know blockchain absolutely not going to be a good fit for?

CHIEF TECHNOLOGY OFFICER FRASER: I'd say for us, we coalesce around instead of looking for the things that doesn't necessarily work, we look at the things that work extremely well so when we look at it for records management and creating higher visibility around transactions as they conduct, blockchain is a great use case for that, a great solve for that use case, and that's where we're jumping in. The market has proved that it's very effective for that use case, and there's a lot of success that we've seen not just domestically but internationally around the leveraging of blockchain to remove friction from those types of processes. Now in areas where we look to jump in in some of the more volatile spaces, those areas where we have to, again, prioritize where the City is going to invest based on not what's cool and flashy but what means the most for the people that will leverage the technology, and that's how we drive what we prioritize.

CHAIRPERSON GUTIERREZ: Thank you. I wanted to ask, just back on the MyCity piece because obviously I know the childcare portion is the first phase, can you share a timeline on what the rest of the evolution, what are the next benchmarks that we can look forward to, and when can you say confidently you will feel it's fully launched?

CHIEF TECHNOLOGY OFFICER FRASER: I'd say we've got the first phase is coming out by the end of the first quarter. Beyond what you're going to…

CHAIRPERSON GUTIERREZ: That'll be tomorrow.

CHIEF TECHNOLOGY OFFICER FRASER: Could be as soon as next week. If it was tomorrow, I'd tell you it's tomorrow, but it could be as soon as next week, could be as late as the last week of March, but we expect it sooner rather than later. When we look at other things that are coming or expected to come out of the MyCity universe, we have things like business portals and jobseeker portals, those that are interested in getting interactive with the small business community here, being able to streamline some of those benefits and application processes, those that are looking or seeking employment whether

being married with an employer or being pulled into the city workforce, streamlining and simplifying those processes, and those are two of the things that are coming fairly near-term after the childcare portal. Other things in the benefits eligibility space, being able to, as I mentioned with the digital wallet, do things like transportation-related subsidies and things along that line.

CHAIRPERSON GUTIERREZ: But you can't share anything related to the timeline for the remaining?

CHIEF TECHNOLOGY OFFICER FRASER: I am reluctant to do so, but when we have a clear line of sight, I can certainly do that, but I can tell you for sure the MyCity Childcare Portal will launch before the end of the first quarter of this year.

CHAIRPERSON GUTIERREZ: Commissioner, if we have another hearing and you're here again telling me it's pushed back, I think it's fertile ground to wild out a little bit because I think we've been patiently waiting.

CHIEF TECHNOLOGY OFFICER FRASER: I feel like if it were to get pushed back for any reason, it would require something significant. We did not see

the pandemic coming, we did not see a number of other things coming, and I'd say barring extenuating circumstances…

CHAIRPERSON GUTIERREZ: That's fair.

CHIEF TECHNOLOGY OFFICER FRASER: It should be (INAUDIBLE)

CHAIRPERSON GUTIERREZ: I think we're looking forward to it. I think it's exciting so we just want to be able to bring that back to our communities and give them a timeline. I think that that's warranted.

CHIEF TECHNOLOGY OFFICER FRASER: If there's no extenuating circumstances, feel free to wild out.

CHAIRPERSON GUTIERREZ: Okay. My next couple of questions, Commissioner, are related to prior hearings. In August, Commissioner, you testified that the Department did a survey of every agency on all tech programs that you have running of significant size and scale so that OTI could begin to do an assessment to see areas where you could consolidate, save costs. Do you have a sense of where some of these agencies responses to said survey is or assessment is, specifically DFTA or DCAS for example.

CHIEF TECHNOLOGY OFFICER FRASER: We've received a response from every agency, and we have a catalogue that we put together. The rationale behind how we're moving forward is very similar to how enterprises make decisions around where they invest. I guess the best way I can put this is if you think about it from the landscape of a company that's done an M and A, Merge and Acquisition, pulled another company in. There are lots of redundancies and systems that perform the same function, like HR, like benefits processing, like a number of things like that so what we've done is we've looked across the City's tech estate, we've looked at disparate initiatives that are focused on producing the same outcome, and we're currently evaluating how we collapse those instead of having 10 initiatives that focus on an HR system, how can we bring those down into a single initiative that covers those 10 specific use cases instead of making 10 separate investments that will cost something significant. I think we're still in the process, again, with the size and scale of the city and its tech estate, there are more than a handful of initiatives that exist,

and we're in the process of rationalizing and streamlining.

CHAIRPERSON GUTIERREZ: I see, but there's nothing concrete that you can share with me regarding DFTA's and DCAS' responses, and I bring this up because we have legislation within both agencies and at a hearing that we had I know that basically their response to whether or not they would support these bills were really related to the assessment that the agency was making so that's really why I'm pressed to make this ask.

CHIEF TECHNOLOGY OFFICER FRASER: What we could following the hearing, I'd gladly meet with Council and do a complete recap of what we have specifically and the pipeline from those entities, and, yes, both DFTA and DCAS had responded and provided insights into any tech programs that they have of significant size or scale.

CHAIRPERSON GUTIERREZ: Have you been able to do the same or have received responses from every single agency at this point?

CHIEF TECHNOLOGY OFFICER FRASER: That is correct.

CHAIRPERSON GUTIERREZ: Okay, thank you. From the team hearing in August, in the same spirit of assessment, we were talking about audits that the City does, does the City conduct audits of its websites, applications, or other online service delivery systems to assess functionality?

CHIEF TECHNOLOGY OFFICER FRASER: Yes, we do.

CHAIRPERSON GUTIERREZ: You do? Okay. Are those audits public?

CHIEF TECHNOLOGY OFFICER FRASER: No. A lot of those audits might be security related, it might accessibility related. Historically, those audits have not been published externally. Of course, the security stuff, it will point out any vulnerability that may have been identified which creates risks. In terms of accessibility, we could look at if you'd like to do a review, we can organize a review with Council to go through some raw findings in the last round of reviews and audits that we've done.

CHAIRPERSON GUTIERREZ: Okay. That would be great. My next question, and sorry to jump back to

the MyCity Portal, but are there any plans to incorporate blockchain with the MyCity?

CHIEF TECHNOLOGY OFFICER FRASER: We are certainly evaluating ways that we can do that in the lenses that I've mentioned before around document management and things along that lines, vital records management, document and property management, things along those lines, and then, of course, through leveraging third party providers to help with payments. Beyond those two specific use cases, there isn't anything on the foreground at the moment.

CHAIRPERSON GUTIERREZ: Okay. All right, Commissioner, those are my 16 pages of questions. I thank you for your time, all of you. Again, I just think we want to hear more concrete. I know that a lot of this is working as we go, but we, I think, deserve to understand, especially with a Mayor who's championing the conversations around blockchain and cryptocurrency, we want to hear more concrete answers and more concrete timelines so I'm holding you accountable, not only to the MyCity app which could launch any day between now and the end of this first quarter.

CHIEF TECHNOLOGY OFFICER FRASER: Yeah.

CHAIRPERSON GUTIERREZ: Sounds right?

CHIEF TECHNOLOGY OFFICER FRASER: Yeah.

CHAIRPERSON GUTIERREZ: But also this digital wallet. I think it's fair. I hope that you understand that, that we have these conversations, we want to continue to be leaders, but we have a real responsibility and as much as you can share with us and our Committee we would be happy to continue to support that. We want to do this responsibly and we want to continue this relationship.

CHIEF TECHNOLOGY OFFICER FRASER: I would say as the great Mayor of this fair city would say, if you don't inspect what expect, everything is suspect, so the work that you're doing now to sort of peel through what's happening, making sure that you set a fair expectation around what happens and continuously inspect to make sure we're doing what we say we're going to do, it's what we expect in terms of the partnership with Council so more than happy to come back to answer any questions the Council may have, and I look forward to the partnership to come.

CHAIRPERSON GUTIERREZ: Yeah. Thank you so much. Thank you.

Next, we're going to go on to the public testimony. We're going to take two minutes. I hope you can stick around for the public transportation. We're just going to take a two-minute bathroom break. Thank you.

CHIEF TECHNOLOGY OFFICER FRASER: Thank you, again.

CHAIRPERSON GUTIERREZ: Yeah.

SERGEANT-AT-ARMS: Everyone, please find your seat, please find your seat. We're getting ready to resume. Once again, folks, please find your seat. We're getting ready to resume.

CHAIRPERSON GUTIERREZ: Welcome back, everyone. I'm going to hand it off to our Counsel, Irene Byhovsky.

COMMITTEE COUNSEL BYHOVSKY: Thank you, Chair. We will now begin public testimony. To accommodate everyone, we'll ask that witnesses limit their testimony to five minutes, and we'll start with witnesses who are here in person and then we turn to those who are joining us via Zoom.

Our first panel includes Brian Daugherty, Allen Rechtshaffen, I apologize if I mispronounced the last name, and Albert Fox Cahn.

You can start in any order when you're ready.

BRYAN DAUGHERTY: Thank you. Good afternoon, Chairwoman Gutierrez and Members of the New York City Council Committee on Technology. My name is Bryan Daugherty, and I am the Director of Public Policy for the Bitcoin Association, and educative non-profit trade association focused on advancing the original vision of Satoshi Nakamoto, which is a globally scalable public blockchain for enterprise, government, and individual users to transfer value and data securely and efficiently. I am honored to be before you today and share my views on digital assets and the underlying technology, blockchain.

First, thank you for hosting this hearing at such a critical juncture. The recent collapse of FTX has left policymakers, media, and the public scrambling to make sense of the situation. There appears to be little question that FTX suffered a critical failure in leadership at best and criminal activity at the worst. Unfortunately, it is also my view that the collapse of FTX may not prove to be an isolated event. The rampant speculation in the

digital asset markets, which I often refer to as the crypto casino, has created a complex environment where illicit finance, influencers, and Ponzi schemes can thrive. Proponents of digital assets have advocated that cryptocurrencies can help foster financial inclusion and increase efficiencies, but the fact is that most are only seeking to trick consumers and investors out of their hard-earned money with false promises of future solutions. It is the Bitcoin Association's opinion that blockchain, not crypto, is the real long-term innovation of the future. Organizations can leverage the advantages of immutable data integrity, improved network security, and micro-transaction capabilities of blockchain today. I am currently collaborating with developer groups in the United States and across the globe creating state-of-the-art utility applications for cybersecurity, ESG, authenticated carbon sequestration, digital rights management, and several other fields that will be announced later this year. So what could the widespread utilities of blockchain mean for New York? Cyberattacks continue to plague our nation's state, local, and municipal governments. The last year's hack of Illuminate Education, a

taxpayer funded software company that New York City's Department of Education uses to track grades and attendance was compromised with over 800,000 students' personally identifiable information being stolen. By deploying CERTIHASH Sentinel Node, a blockchain cybersecurity platform which we developed in collaboration with IBM, local governments can be alerted to unauthorized data modifications and breaches and mitigate the detection time of a data breach from the current average 221 days to near instant. Let me repeat, almost immediate real-time intrusion detection. This is a prime example of where the city and the state can immediately benefit from implementing a blockchain infrastructure.

Another example of blockchain's widespread utility is in the ticketing industry, a little bit which you spoke about today. Through a (INAUDIBLE) a solution built on blockchain, illegal fraudulent ticketing scams are almost completely eliminated. This technology can even be incorporated into the City's public transportation system to improve efficiencies in (INAUDIBLE) all while making it possible to help underserved populations in the process.

Moving forward, I believe it is critical that policymakers at all levels, local, state, and federal take a step back and understand the incredible utility promise that blockchain provides. It is critical that we as a country do not take a "throw the baby out with the bathwater" approach when distinguishing between blockchain and the crypto casino.

I look forward to working with this Committee and the Mayor to ensure that New York City remains a leader in this emerging technology and thank you for the opportunity to testify today.

COMMITTEE COUNSEL BYHOVSKY: Thank you. The next panelist, please.

ALAN RECHTSHAFFEN: Good afternoon, Chair Gutierrez, Members of the Committee, people who are watching from all sorts of remote locations. I'm honored to have the opportunity to appear before you today to provide testimony on the subject of responsible oversight of cryptocurrency and blockchain technology in New York City. My name is Alan Rechtshaffen. While the thoughts I share today are my own personal opinions, I have extensive experience in understanding cryptocurrency and

blockchain technology. I am the Chair of the Digital Assets Forum and Lab at the Wilson Center in Washington and a Senior Lecturer of Laws at New York University. The Wilson Center, as you may know, is the think tank created by Congress, the government's think tank. The Digital Assets Forum and Lab has been at the forefront of analyzing the implications and opportunities presented by this rapidly evolving technology. Our work has found that cryptocurrency and blockchain technology may have the potential to provide numerous benefits including increased financial inclusion, improved financial security and privacy, and greater efficiencies for recording information in a decentralized way. Cryptocurrencies are a use case for blockchain technology. However, it is vital that we are sensitive to the fact that the problems and potential use cases for blockchain go far beyond financial instruments and transactions. Indeed, blockchain has been heralded by some as the technology that might be implemented to reboot the very infrastructure of the web, so-called Web3 technology. I'm happy to discuss this more during the question and answer period. It is equally important to recognize the potential risks associated with this

technology including illicit activities, not the least of which being the potential for bad actors to take advantage of consumers who want in on the game. In recent years, digital assets such as cryptocurrencies have rapidly gained popularity. As the use cases for blockchain grow, it is important for municipalities to consider the role that this evolving technology will play in the lives of all its citizens. Local regulation of digital assets presents a unique challenge because these assets exist in a decentralized and global network. This makes it difficult for a single municipality or entity to regulate digital assets in isolation as its actions can have unintended consequences for individuals and businesses located outside of the jurisdiction. Indeed, in 2022, the President of the United States issued an executive order calling on the government to outline standards for regulating digital assets. Congress is also considering how to regulate this technology. The SEC and CFDC are taking positions. The field is crowded with those looking to control and regulate this technology and its use cases. However, municipalities, and in particular New York City, can play a key role for its residents to

protect them and promote the responsible use of digital assets and the adoption of the technological innovations. Specifically for New York City, I would recommend the establishment of a Blockchain Commission whose purpose will be to understand and share with New Yorkers the latest information on the potential of this game-changing technology. This Commission might produce a report on the state of the debate identifying the risks and rewards and the technology, helping New Yorkers to see where they might benefit and what the future holds. The Commission should be headed up by a non-political academic who can provide reliable information for Council, the Administration, and all New Yorkers on all the evolution of blockchain technology and its potentials. This could be achieved through a combination of education, outreach, and consumer awareness. It would also help business understand what is possible and those who are in the workforce to explore new careers.

In conclusion, I would like to emphasize the importance of balancing the need for regulation with the need for innovation and growth in the digital asset industry. By working together with

other levels of government, New York City can help ensure that we are aware of the risks and the rewards and the benefits to all stakeholders including consumers, businesses, and the broader economy. I am happy to take your questions.

ALBERT FOX CAHN: Good afternoon, Chair Gutierrez. My name is Albert Fox Cahn, and I am the Executive Director of the Surveillance Technology Oversight Project, a New York-based privacy organization. I'm also a fellow at Yale Law School, Harvard Kennedy School, and a practitioner-in-residence at NYU Law School.

I'm here today because we've seen with cryptocurrency a path of destruction forged by conmen, charlatans, and those willing to exploit the greed and dreams of those who seek a payoff from cryptocurrency in order to peddle products that misled and actually enabled outright fraud, but as we explore the transition from a Web3 architecture focused on cryptocurrency to (INAUDIBLE) focus on other novel uses of blockchain, I'm quite alarmed to think that New York City would experiment with New Yorkers, make us the guinea pigs for novel and unproven blockchain technologies that really do not

serve our interest. In delivering centralized city services to large numbers of individuals, the decentralized blockchain technology that fuels cryptocurrency just doesn't make sense. It is not something that is really applicable to the sorts of problems we are trying to solve. We're delivering these centralized services from agencies, not trying to create an alternative pathway to trust as cryptocurrency does. The whole point of cryptocurrency is that it is decentralized, not a way for agencies to work from a single point of command and control. Using blockchain is much more expensive, it's slower to scale, it has so many problems that don't come from traditional databases, and when we hear about the types of things that the City wanted to address, whether it was benefits eligibility or consolidating people's information, none of that requires a blockchain. Quite frankly, we kept hearing the City connect blockchain to other services and IT upgrades that have nothing to do with a decentralized digital infrastructure. Again and again, I tried to see how the City would connect the dots, and it failed to, and what I'm quite concerned is that because of the broad-based excitement about

blockchain because people have made fortunes off of it, that we will see a desire to implement blockchain as part of our digital infrastructure at a time when it really only serves the companies that are selling blockchain consulting services. We need to focus on the actual digital infrastructure that will support basic delivery of city services. We need to focus on that sort of tried-and-true technology and, quite frankly, given the failure to invest in already-established forms of digital infrastructure across city agencies, it's kind of like trying to fast forward through multiple layers of municipal technological development. Instead, we should just be trying to actually get the stuff we already have to work. As far as digital inclusion, as far as financial inclusion, as far as these other important issues, we should be focusing on community-driven responses such as investment in community-based credit unions and other platforms for getting banking resources to New Yorkers. The solutions all too often aren't digital, they aren't high tech, they aren't novel. It's investing in communities and the infrastructure we need to support New Yorkers, particularly those on the margins. I would also note

currently in New York, we have none of the privacy protections under law that we would need to prevent this information from becoming both a policing tool and yet another data source for ICE. With that, I would welcome any questions.

CHAIRPERSON GUTIERREZ: Thank you. I do have some questions. I want to start with Alan and Bryan. Regarding blockchain and the way that the City could potentially work around that technology, I know that Alan you brought up an entirely independent commission. What are some ways in which the City can look at ways of providing oversight to a commission, for example, or the way that the City is planning on integrating blockchain, what are some of the ways that we can provide oversight?

ALAN RECHTSHAFFEN: In terms of oversight, the way I see this Commission is it's a commission that allows people to understand the evolution of a technology, which I agree with my fellow panelists, is largely untested. The things that you hear that blockchain can do are mostly theoretical. Most of the blockchain transactions that you hear about are moving stuff around that is just like coins on the blockchain. That said, there is the potential for a

major shift as a result of this. For instance, if you have social media platforms that are no longer controlled by one person so one person is not watching over everything that I'm doing and everything I'm buying. That's somewhat interesting that they're not gathering in the information, that we can hold our own identity, largely untested and no empirical evidence that it works. However, I think it's necessary for a municipality, especially New York City which really can take the leadership here, to explain the evolution of this technology to understand what's out there and what the potentials are because there are a lot of resources going into this area. The graduates from MIT, there's a lot of movement, and where those people go and where the money goes, that technology is going to be growing. Even if the historically classic technology or the Cloud technology is better right now, if you put all that money in it and all that resources into the growth in blockchain, that will change the dynamics of what's going on. What I really see the opportunity for the Council, for the City, for the Mayor to do is to really loop the citizenry of New York into this evolution so it's not a surprise and so it's not a

matter of people in a room making decisions for people who aren't in the room.

CHAIRPERSON GUTIERREZ: Thank you. I think I share a lot of the concerns that, Albert, you brought up. What we were trying to achieve today from this hearing was like because this is the operation of OTI and because of the things that you highlighted, it's very hot right now, we have a Mayor who has publicly referenced his interest in wanting to integrate this a little bit more. It's been a year now. We want to understand what has the research turned up, what can we look forward to, but I think your point, Alan, about integrating New Yorkers is vital. I don't think that we've done any due diligence in empowering our communities to understand the volatility of this, the security issues, and, to your point, is this actually going to do anything that we need it to do so that's why I'm curious with you all because I realize the level of support for blockchain technology, I'm curious if you think there is a portion of blockchain technology that is more valuable or applicable to the way the City operates?

ALBERT FOX CAHN: I think any time you're looking at potential deployment of blockchain you

have to ask a series of questions. How are you using blockchain, why is that preferable to traditional Cloud-based computing, what is the advantage to having that sort of transparency, how is that justifying the potential increase in cost? Quite frankly, earlier when we heard the Administration justifying potential investment in blockchain, I didn't hear any use cases there which really justified an investment in blockchain to deliver that service. That doesn't mean it's impossible that you would have a case where that made sense, but really we've seen already a lot of investment including by New York State in blockchain technology of dubious utility. An example is the tens of millions spent on Excelsior Pass, the COVID vaccine passport that cost I believe it was tens of millions of dollars, the cost inflated dramatically and, despite claims that it was using blockchain, it was never clear if it actually was using a deployment of the technology so I think there has to be really extensive due diligence to peer beyond a lot of the buzzwords that we hear being used in the contracting space and understand the specifics of how this would benefit New Yorkers.

CHAIRPERSON GUTIERREZ: Thank you.

BRYAN DAUGHERTY: Yeah. I think this is a great question. Really, you have to have rules for the roadway. Scaling, security, sustainability, these things matter no matter what technology that you're speaking about, and when you're regarding blockchain technology and doing the due diligence and even creating these pilot projects that I fully support for the City and the State, you should set some boundaries there because there's a great deal of froth in the sense of I can copy a few lines of code and create my City Council coin or any coin in just a matter of a few minutes, but the reality is they don't really have a roadmap and they don't really have a purpose, as you've heard even on this panel, the majority of these cryptocurrencies are just kind of an ability to fleece people out of their money. What I would argue is that as you spend time to investigate these technologies, that you have some technology benchmarks of how much transactions per second can the blockchain that you're proposing to do something on, what are the costs of those transactions, are they able to contain data, is that data public, private, or is this some anonymous coin

so these are some basic questions that I will be more than happy to help the City fashion to give some boundaries so that way when you're doing a pilot project that the money that is being put into it is actually resulting in something that could scale just even to the city size to provide a utility back to the constituents. I would like to say that there have been so much innovation in this space, and a great deal of what people have learned whether early on in 2010 or onwards has changed dramatically, and that includes consensus mechanisms and all of these difficult terms, you've heard some of them today, and it does require somebody with enough understanding of what has occurred then, where we are now with this technology, and what those differences are, and I'll just give you a key piece. I hear quite often of the energy consumption of Bitcoin which BTC which is a competing protocol that shares the same genesis as other bitcoin protocols, actually it's due to the minimal one-megabit size block every 10 minutes versus an unbounded size type of bitcoin protocol which exists today which turns the tides of energy down to actually less than 2 grams per CO2 per transaction compared to 1200 grams of CO2 per

transaction with BTC today so I think that there's a great deal of innovation that has occurred even revolving around the public/private sense of this data and even what actually constitutes a blockchain because I would argue a federated, a hybrid, a consortium type of blockchain is no better than the Cloud or really serves no other purpose than really to kind of trick people into thinking that it is a blockchain. From my point of view and the Bitcoin Association's point of view is that blockchain has to be public, it has to be stable, it has to be secure, and it has to offer micro-transactions. If it's not able and capable to do these things, then it really doesn't qualify as a blockchain but rather just somebody else's private database, and that immutability and permanence of those records, the micro-transactions, the data integrity that we're all very excited about in this space is kind of gone for nought.

CHAIRPERSON GUTIERREZ: Thank you all so much for your testimonies. I think we'd love to follow up at some point after today's hearing, but I appreciate you all sticking around and for your really, really comprehensive testimonies.

COMMITTEE COUNSEL BYHOVSKY: Thank you, everyone. Our next panelists are Julian Kline and Cleve Mesidor.

You can begin your testimony.

CLEVE MESIDOR: Good afternoon, Chairwoman Gutierrez and esteemed Members of the Committee. I'm honored to be here with you today. I'm Cleve Mesidor, Executive Director of the Blockchain Foundation, a 501(c)(3) non-profit focused on education. We work to ensure the public has access to trusted content from reputable sources in order to make informed choices. We have developed strategic partnerships locally in New York City with the New York City Department of Small Business Services and the Zahn Innovation Center at City College to help educate their stakeholders. I come before you as a product of the New York City k-12 public school system. I grew up in Queens, graduated from Richmond Hill High School, attending SUNY Albany. Previously, I worked in Congress and for the Obama Administration. I have been working full-time in crypto for over six years. Today, I will focus on the differences between longstanding exclusionary consumer protection policies and 21st century legislative action that can

actually empower and foster meaningful financial inclusion. Please see my written testimony for more details, but I'm going to provide a summary.

Consumer protection policies often centered around financial disclosure, they do not provide a clear pathway to advance economic or job growth nor do they expand access to capital to fuel entrepreneurship or promote wealth creation. Let's learn from the mistakes of the policy debates around the internet in the 1990s. They did not prioritize accessibility, inclusion, workforce training, or financial literacy in those discussions and look at the state of the internet today. Let me step back and provide some context. Black and Latino communities lead national adoption of cryptocurrency. Several data sets have proven that. There have been black and Latino innovators in crypto since its beginnings in 2009. We are not latecomers. We are leading, and we need to be present at these types of forums because our voices matter. We do not just buy and trade cryptocurrencies. We are creators and holders of NFTs, and we fuel the DeFi ecosystem and the Web3 marketplace, and we are developing products and services to tackle inequities. The price of

cryptocurrency is not our great motivator. It is the potential and the capacity for ownership. We still need more data because right now there are a lot of assumptions being targeted at us. We are racially profiled as victims of crypto without any facts or data while the "sophisticated" retail investors who are primarily white investors who are the core of the Celsius and Terra Luna and FTX collapses, they are not subject to the patriarchy disguised as consumer protection. Consumer protection should not just be targeting black and brown people. It should be for all consumers.

Now, let's be honest. We cannot build wealth without taking calculated risks and bear markets are part of investing so we absolutely should be talking about tools to help consumers mitigate risks, but too often the debate is around banning access. Government actions to empower consumers are just as important as traditional protection policies. Education is the first line of defense against digital assets scams. Our foundation recently published a report "Infusing Digital Assets and Jumpstarting Financial Literacy in America's K-12 Education Systems." We highlight that 17 states

require at least one financial literacy course to graduate high school. Unfortunately, right now New York State is not among them, but we can change that. I urge this City Council to focus on policies and rules to foster innovation so that entrepreneurs can thrive here. We need to focus on policies to promote economic and job growth in Web3 and in DeFi. We need to focus on measures to ensure entrepreneurs will not be the casualties of enforcement actions, and we need to focus on policies to increase access to capital for entrepreneurs of color and female entrepreneurs.

As I close, I want to applaud the City Council and this Committee for prioritizing this conversation. Thank you for the opportunity to weigh in.

CHAIRPERSON GUTIERREZ: Yes, thank you.

JULIAN KLINE: Hi. Good afternoon, Chair Gutierrez and Council Members. Thank you for holding this hearing today. I'm Julian Kline, Head of Policy at Tech NYC, which is a member association and advocacy group for the tech community.

As the financial capitol of the world and the second largest tech hub in the U.S., New York City is a crucial market for developing Web3 and

blockchain technology. Studies last year found that New York City is ranked the number two fintech hub in the world and that there were 435 blockchain and cryptocurrency startup companies here in addition to the over 800 fintech companies in New York. Since these numbers were published, we have been seeing a market correction for cryptocurrencies and platforms which is an opportunity for companies to revisit their core priorities and concentrate on services that are dedicated to long-term success. New York State's virtual currency licenses have also helped to shield the State from unstable companies. New York is home to a vast community of innovative blockchain, Web3, and decentralized finance companies. These technologies are based on universal and accessible recordkeeping, which creates new solutions compared to data technologies. Blockchain and decentralized finance technologies are being built into various local industries including banking at Goldman Sachs and BNY Mellon as well as consumer products like Estee Lauder to help keep track of ingredient supply chains. Virtual currencies and platforms make financial products more accessible for New Yorkers, providing more options to make investments and

transfer funds to others quicker and without excessive banking fees. These services not only increase financial options for the underbanked in immigrant communities but also provide new options for sending funds to family members around the world.

Web3 and blockchain technologies can also be incorporated into government operations. The most common uses have been seen in recordkeeping, issuing licenses, certificates, and digital IDs. Blockchain technologies are currently being used in California to store car title records and in Rhode Island to allow residents to establish state IDs.

Tech NYC encourages the City of New York to continue exploring which agencies, services, and records could benefit from blockchain technology and to develop pilot programs to test these solutions. Contracts from the City to develop these programs will greatly benefit local tech companies and professionals. Additional solutions that have been explored include accepting virtual currencies as payment for licenses, fines, fees, and taxes as seen in Colorado and Utah. Blockchain technologies can also provide efficient and quicker methods for accepting or requesting payments and tracking supply

chains and budgets which the U.S. Department of Homeland Security has been testing. Tech NYC recommends that the City leverage this growing sector and its workforce to modernize city services and recordkeeping. This will provide additional benefits and opportunities for companies both large and small to partner with the City on pilot programs. We encourage New York City to welcome these emerging technologies and provide opportunities for the City to learn from innovative companies in these fields. Thank you.

CHAIRPERSON GUTIERREZ: Thank you. I have a question for you, Cleve. I too am from Queens and I too went to SUNY Albany. I know that you put that in there for a reason.

I do appreciate your testimony really focusing on our communities, on black and Latino communities, and really not just how we are empowering ourselves with crypto but really the narrative, so I'm curious what is your response, you know this better than I do, but what is your response to the criticism that this technology has resulted in big losses for our communities? What is your response to that?

CLEVE MESIDOR: My response is there's no data that shows that it was black and Latino communities that actually suffered the greatest losses. Actually, when you look at Terra Luna and Celsius and even FTX, the greatest were likely white retail investors. Where we see black and Latino communities over-index are in Bitcoin or Ethereum or within NFTs where you actually are those area that will recover so, as I said in my testimony, there are a lot of assumptions being made simply because we are black and brown. There's an assumption that we are not thriving in this space. The space has its challenges, absolutely, we have bad actors, but we need more data before we throw out assumptions and, no, absolutely no, we have data that shows that black and Latino communities lead national adoption of cryptocurrency, but there is no data that we have disproportionately been disaffected by the downturn in the markets.

CHAIRPERSON GUTIERREZ: I just want to ask your opinion, the previous panelists, Albert was I think speaking very frankly about blockchain specifically so this question is for both of you, and how the Administration's testimony today could not

really point to direct services utilizing blockchain that would benefit New Yorkers, that would differentiate the way that they are receiving services now versus on the blockchain? I'm curious from both of your perspectives is that true? How do you feel that the conversation around blockchain or potentially crypto could benefit, could improve the way that black and brown primarily, and New Yorkers receive benefits or interact with city government? What are some instances or cities that that's worked in?

CLEVE MESIDOR: I do want to credit the work that Tech NYC is doing in terms of fueling the entrepreneurship ecosystem because the last I checked all economies are built on entrepreneurship and small business so I do think that there's a lot of opportunities for the City, the State to actually leverage technology not just for efficiencies and optimization within the government but also to foster growth and economic growth. I will say that the first panel, right now we absolutely should be looking at testing some of these options, integrating where these areas make sense. I think it's absolutely true there are some areas where we don't need to use

blockchain. We have a whole slew of emerging technologies, AI, VR, AR, and it is when we actually fuse them that we're most effective. I think at the heart of the question is this space is barely a decade old. We are at the starting line of a new industry, and it's going to take time for this space to mature, but it is disconcerting that the financial capitol of the world with Wall Street in its backyard is very resistant to not just looking at the technology for government efficiency but also to fuel entrepreneurship and to optimize how we do business in New York City. I'm not sure if that answers your question, but I do think for the opportunity to grow we have to be open.

CHAIRPERSON GUTIERREZ: Thank you.

JULIAN KLINE: I would add that blockchain and cryptocurrency technology really has made a huge difference in terms of transaction timing and in terms of if someone was to transfer funds from bank accounts, it could sometimes take days to clear whereas this creates solutions that make efficiencies and a lot of headway in terms of the times of currency transactions so that could be something that could easily in the future benefit government

services, especially people who you could be paying for applications or any sort of government services or processes. I think in addition to that we are seeing some uses for this technology to help back the logging and applications for IDs, and, as this is something that New York City has made a huge amount of progress and is one of the leading cities in terms of ID accessibility for all types of New Yorkers and so that is something where, as New York and other states and cities continue to develop ID and driver's licenses to be more digital and virtual, this could help make a difference there.

CLEVE MESIDOR: If I can add, especially to piggyback off of that, digital cash infrastructure is the important piece right now when you look at making payments cheaper and faster. My family is Asian American. We send money back home and right now Western Union can take up to 30 percent. These transactions have been shown to be cheaper and faster, leveraging cryptocurrency. The cost of doing business for entrepreneurs, e-commerce businesses is high. They charge a lot for you to accept credit cards so digital cash infrastructure built on (INAUDIBLE) coins can actually help alleviate that.

Also, when you look at identity as you mentioned, right now federal mandate of Know Your Customer and AML and KYC, those requirements keep people who have been locked out further out because of the identity requirements that we have. Let's be honest. Most people do not have a driver's license or a credit card, and most people cannot access basic services because they don't have that plus a utility bill. Decentralized identify, using those alternative verifiers, can give people more access not just to the traditional financial system but to basic services as well.

CHAIRPERSON GUTIERREZ: Isn't there a level of identity verification for someone looking to complete a transaction, for example? My understanding is that they do need to have proof of residency like a utility bill so I am also trying to understand what the requirements are for someone looking to send money like a Western Union versus like potentially using blockchain. I guess I just don't understand what the difference is because it feels like they are still very much required to provide proof of verification and there's still an element of you have to look for your documents, you have to provide that,

so where is the distinction and how can you support that argument?

CLEVE MESIDOR: That's an excellent question. The distinction is which ID do you need to provide. We know so many people own property but have no proof that they actually own that property and the requirements that any government requires now, most people who have been locked out of any society cannot provide. It's more about how do we actually collect that data and also what are we collecting, and I think to the Council Member's point, privacy is something that is paramount within crypto. Let me give you an example for that. What if we say for communities that may have problems with those traditional identifiers with driver's license and a utility bill that we use something else and then the value of blockchain is we verify that identity, whatever the identity is, and that is part of their wallet, that we identify it twice and now they can use that wallet to share information appropriately so they don't have to give the gas station guy their driver's license to know how much they weigh and if they're a donor or not when the person only needs to verify that they can buy a credit card. I don't know

if that answers your question, but it is really the types of identifiers we've been requesting that are exclusionary. It's looking at different types that people have quite frankly, especially in communities of color, and then verifying them once or when it's appropriate. How many times they go to one city agency, they have to provide this data, but this agency requires something totally different and what if the City can actually verify their identity on blockchain that one time and now they give data as necessary. Just so you know, on the private blockchain side, medical companies that are required to comply with HIPAA by securely storing patient data are leveraging blockchain for that and that actually complies with HIPAA. Companies like Merck are securing patient data on blockchain, and, if that can comply with the Department of Health, we can look at alternatives that can actually make it easier for people.

CHAIRPERSON GUTIERREZ: Okay. Thank you. Thank you both so much. I appreciate your testimonies today.

COMMITTEE COUNSEL BYHOVSKY: Thank you again for your testimony. Now, we will move to hear

from witnesses joining us via Zoom, and our first panelists are Professor Rhodes followed by Noel Hidalgo and followed by Theo Chino.

SERGEANT-AT-ARMS: Your time will begin.

YORKE RHODES III: Thank you to the Committee and to Chairwoman Gutierrez for hearing us today. I'm here in my capacity as a long-time New York City resident. I was educated at New York University in the early '80s, and I currently teach as an adjunct professor in a master's degree program teaching e-commerce in a digital concentration in the School of Professional Studies.

I have had the pleasure to thrive in my work in technology while remaining in New York City. In my day job, I currently work for Microsoft, a journey I started in late 2014 to learn about Cloud. In 2015, I fell down the blockchain rabbit hole on my latest innovation-wave journey, and I cofounded our blockchain work at Microsoft. Three new jobs later at Microsoft, I am now a Director of Strategy and Transformation, leading our blockchain work in our Cloud hardware supply chain. This is award-winning work, garnering the top Gartner Power of the Profession Award in in the supply chain area. We were

also recently nominated as a finalist in the (INAUDIBLE) Risk category for risk management. This work is highlighted in a couple of publication blogs which you can find both on my LinkedIn as well as in my Microsoft vlog, and I will include those in the testimony.

Notably, this is an area of technology that blockchain is being utilized in the context of a multicompany procedure today where we actually do use a private blockchain implementation to achieve very significant benefits both in risk management as well as cost recovery. It is not a public blockchain today, but it actually could ride in a public blockchain infrastructure in the future, and we're actually working on some proof of concepts to validate that the requirements that we currently have in place around privacy among proprietary data across the participants in this private blockchain can be maintained in the category of implementation, for example, on a layer two technology with zero-knowledge proofs, not to get to technical.

I want to speak a moment about the regulatory landscape and how technology companies think about this and as it relates to different

innovation waves that we've lived through and I've been through many since the '80s.

Microsoft and other technology companies often make a distinction when talking about how to govern or regulate technology. In particular, we like to talk about regulation of actors in use cases versus regulation of the technology itself. This debate plays out time and time again. It's played out in the AI space. It has played out in privacy-enabling cryptography and in the digital divide that separates the internet haves from the have-nots. It even delves into code as free speech. I'm not going to go there today. The reason for this distinction is that it's a very slippery slope once you cross this chasm and seek to start to regulate written code. Let's take for example what might have occurred in the tech industry if we had looked to every iteration across my journey in the technology space and what might have happened if we regulated these new inventions to prove (INAUDIBLE) I started in technology as a computer science student at New York University in the early '80s. I've seen the journey of tech booms and busts and innovation waves from PCs to networking to peer-to-peer networking, databases,

client server databases and client server emails to (INAUDIBLE) and the evolution of the web from a command line interface to the scaled up e-commerce and transactional system that it is today. Imagine if we tried to regulate all the code that was being written by IBM, Microsoft, Oracle, Borland, Sybase, and many other companies. To me, the United States would not be the vibrant tech industry community that it is. This innovation would not exist here today. The communities that have flourished around the tech industry wouldn't exist. They would have been regulated into oblivion. Today, New York City is a very significant beneficiary of the tech community, something that in the early '80s was actually not predestined. With the advent of the Cloud boom, it became possible for tech startups to work from offices in New York City versus campuses in Silicon Valley. This tech industry brings with it a vibrant, young, innovative, and intellectually curious community to every neighborhood in the five boroughs of New York City, (INAUDIBLE) in the financial district, Hells Kitchen, and Hudson Yards, East Williamsburg…

SERGEANT-AT-ARMS: Your time is expired.

YORKE RHODES III: Greenpoint, and beyond. While commercial buildings suffer from the reduction of permanent office workers, young community and socially driven people are moving into cities to work and live where they want in the proximity of their peers. Let me say this again, curious young, educated, well-paid people in the tech industry are moving into New York to be with their peer groups. This is a very good thing, and the blockchain and cryptocurrency community in particular is flourishing here as well.

We want to think about this cohort that comes with the technology innovation the same way that we think about the cohorts that attend the universities and colleges that are all throughout New York City. A large number of people have their first experience in New York City…

SERGEANT-AT-ARMS: Your time is expired.

YORKE RHODES III: Because of this draw, the opportunity to work and live in a vibrant city among their peers.

I want to share a couple of things on the technology side. Was that a warning on time?

COMMITTEE COUNSEL BYHOVSKY: Yeah, you have time but just be respectful to other panelists. Thanks.

YORKE RHODES III: In particular, in the blockchain and crypto startup ecosystem, it dominates the fintech landscape. About 50 percent according to CB Insights are actually crypto and blockchain startups within the surveys that they do so it's a very large part of what's going on, and obviously New York City is a great place for fintech.

The Commissioner who spoke earlier had some very good distinctions between blockchain technology and cryptocurrency. Obviously, these are important to consider. This is a vast technical landscape. One of the things we want to think about is that cryptocurrency is a use case of blockchain technology that has been acknowledged by other panelists as well.

I also want to point out because I know in New York State there are specific regulations against specific types of mining activities. About 98 percent of the cryptocurrency and blockchain communities actually don't use those types of mining algorithms so while it's unfortunate that one of the

largest does, a lot of the tech innovation is going on outside of that particular community in the area of proof of stake and so it's an important distinction when we talk about this that we don't throw out the baby with the bathwater so to speak.

Similarly, when we talk about the fraud that's going on in the cryptocurrency space and the examples that were referenced, certainly including Terra Luna, FTX, and others, those are examples of bad actors who are leveraging an industry to actually achieve their fraud. They're not examples of fundamental flaws in the technology, and this is a very important distinction because we can see those bad actors in regulated communities as well, and we don't throw out the financial system.

A couple of areas that I want to highlight, and I'll pass it over back to Committee. There was a point made earlier comparing blockchain to a database. Blockchain is not a database. It's a transactional ledger, and it has very specific properties associated with that that are designed for a specific purpose, and there's a huge benefit to the qualities of these sealed, in-time transactable, attestable, immutable technology called blockchain

that is absolutely very different than a database and has different use cases than when we seek to build a high-scale transactional database on top of blockchain technology. However, blockchain technology could provide valuable use cases around a set of attestable data, attestable signatures, things like the examples the Commissioner used earlier around deeds and titles and things like that. I would go so far as to say that transitioning from physical notary typically into digitally attestable signatures would be one (INAUDIBLE) step from a regulatory perspective to actually advance the entire world around things that are digital. There's a whole landscape of other really interesting things that going on. Someone mentioned the example of the license use case earlier. That's a use case in both zero knowledge proofs, which is interesting technology, as well as decentralized identities or cell phone identities, which are also very powerful constructs of this technology sphere.

Lastly, the technology space is really pushing forward many areas of technology that have been very niche in the past, and zero knowledge proofs is an example of that. There's been research

in zero knowledge proofs which in the industry and at Microsoft and academia for many, many years, but there's never been an application that's allowed this technology to be scaled up and tested in the wild on the internet the way blockchain technology and cryptocurrencies have. With that, I will pass it over back to the Committee.

COMMITTEE COUNSEL BYHOVSKY: Thank you so much, Professor Rhodes. We would appreciate if you send your testimony in writing.

Next panelist is representative from BetaNYC.

SERGEANT-AT-ARMS: Your time will begin.

JAZZY SMITH: Thank you. Good afternoon, Chair Gutierrez and Committee Members. First off, thank you for creating an option for us to participate remotely. We believe that remote communication tools are fundamentals for the government in the digital age. I am not Noel. I am Jazzy Smith, I use she/her pronouns, standing in for Noel today, and I am the Fellowship Manager at BetaNYC.

A little bit of background. Beta NYC is a civic tech organization dedicated to improving lives

of all New Yorkers through civic design, technology, and data. We envision an informed and empowered public that can leverage civic design technology and data to hold government accountable and improve economic opportunity.

BetaNYC demystifies design technology and data to the point where anyone can use, create it, and participate in the decision-making process. We host a number of online platforms that provide the general public a mechanism to share ideas and data. For the last 10 years, we've helped New York City government agencies explore and adopt to new technologies. For the last seven, we have dedicated our efforts to modernize Community Boards. We have researched their needs and documented technology and data literacy gaps across all five boroughs. We bridge these gaps via a service we call Research and Data Assistance Request, RADAR for short. RADAR has helped provide in-depth technology and analytical services to Borough Presidents, Council Members, Community Boards, and community-based organizations. Through our research, we haven't seen cryptocurrencies, i.e. City Coin, nor blockchain technologies provide any real solutions for New

Yorkers who need government services through technology. Right now, blockchain technology is not a piece of technology that's mature enough for government services. Currently, blockchain and cryptocurrencies are solutions looking for a problem. Why should we adopt experimental technology when we can barely keep our current services modern? We spent a decade being sold on smart city technology only to see government practices not keep up with the marketing hype. From gunshot detection to facial recognition, we consistently see groundbreaking technologies fail to meet their marketing. Chris Wong, an NYC urban technologist, so aptly said "every government agency everywhere is working on a new system. It will solve all of their data problems and it will be ready to use in 18 to 24 months." We don't want to be fleeced again. We recommend keeping an eye on blockchain and cryptocurrency development, but let us make sure that we fix current issues with government services. Let's make sure that we're developing services for all New Yorkers first. Moving forward, we want New York City agencies to ask themselves three questions before adopting any blockchain or cryptocurrency technology.

One, how does blockchain or cryptocurrency tools uniquely address this need?

Two, how are blockchain or cryptocurrency tools better than the currently vetted open or closed source tools.

Three, what are the unique issues that these tools will solve that won't require perpetual service contracts with external service providers?

I will defer to my team for any followup questions. Thank you for the opportunity to speak and for your time and attention.

CHAIRPERSON GUTIERREZ: Thank you both. Thank you, Jazzy. Thank you for sticking around to testify. I don't have any questions.

COMMITTEE COUNSEL BYHOVSKY: Thank you, Chair. Our final panelist is Theo Chino.

SERGEANT-AT-ARMS: Your time will begin.

THEO CHINO: (SPEAKING SPANISH) My name is Theo Chino. I used to be a Bitcoin entrepreneur, I am a Latino, I am a victim of housing, and basically everybody talks about the Latino, the poor, and access to the technology. Basically, I'm the embodiment of how the lawmakers, the technologists, the politicians, and every stakeholder is talking on

my behalf, but they have made sure that we, the poor, the uneducated black and brown Latinos of New York City cannot participate in the technology. Let me explain how this happened or how it goes about.

Today, the definitions that are shared about blockchain technology and Bitcoin are basically based on the illiterate definition created by clueless high school students back in 2009 on how to explain what the technology was to clueless parents. That is the definition that the FBI, that the Attorney Generals back in 2009 used to define blockchain. Basically after that, those definitions were used by Senator Schumer to create a fear around the industry that was also used by the Mastercard and the Visa of the world because suddenly they were fearing some competition. In 2004, after the NYDFS hearing suddenly you had this huge industry leader such as the Winklevoss brothers, such as other people who came and said we need to regulate because there were some bad actors and we couldn't let the uneducated people have that technology so they came up with the NYDFS Bit License which you heard our CTO talk about. At that moment, basically I had 150 bodegas throughout the Bronx and Harlem and Northern

Manhattan, we were subjected to the BitLicense so not only I had to close and my business and all the investment I put forward got lost so basically the BitLicense is the biggest hinder of the technology in the State of New York so one thing the City Council could do is actually put a resolution forward and say we would like the BitLicense to be abolished.

Let me tell you a little bit about myself, what is the Bitcoin, first of all, or the token. First of all, it is the first intangible commodity ever created. If you read Karl Marx chapter one on commodity, Karl Marx talks about the relative form of value, and that's what Bitcoin is. It is a commodity, and that's it. Let's not wrap our world around blockchain, the this and that, it's the first intangible commodity ever created on the internet. Why do I bring that up? Because if you think of Bitcoin and everything that comes out of the blockchain, every product that comes out of the blockchain as an intangible commodity, then you can wrap your head around legislating the product that comes out of that technology. Right now, we're not doing that. The BitLicense was a big problem. In terms of why Latinos are afraid or poor people are

afraid to jump into that space, well, you have to look at what are the consequences of jumping in the space, look at Russ Aldridge. He's serving a life sentence for having created the marketplace around Silk Road. Is that sentence fair? Is that sentence the right sentence? One can ask these questions, but they happened in New York, and all New Yorkers are afraid to jump into the space without knowing what's going to happen to them, and we can talk about a Bitcoiner in Arizona, Thomas Costanzo, who spent five years in jail because the FBI wanted to know how many Bitcoins he had and they kept asking and they kept buying Bitcoin from him until he did a transaction where it's 100,000 dollars-worth in cash in a McDonald's. These are consequences for poor and Latino and brown and black people when dealing with Bitcoin so we don't want to be part of that technology sphere so we have to go out.

SERGEANT-AT-ARMS: Your time is expired.

THEO CHINO: If you have any questions, I'm available.

CHAIRPERSON GUTIERREZ: You can finish your testimony.

THEO CHINO: If you want to talk about my background, which is I started as a computer kid in the ’80s, I worked in Silicon Valley, I started with (INAUDIBLE) in the ’90s. I couldn’t get a credit card machine because of the color of my skin so basically (INAUDIBLE) disappeared. I worked for Cybersource, which is a credit card fraud company in Silicon Valley, worked for Time Warner, I am a member of the Socialist Party, I am the leader of the Social Democrats of America, a socialist faction inside the Democratic Party, and I deal with a lot of technology such as (INAUDIBLE) New York Restorative Force, and the New York City Privacy Board Advocate, and I used to be a candidate for Public Advocate of New York City because the Public Advocate is the leader of the COPIC. COPIC is the body that is supposed to answer all those questions about privacy, technology, and government information, and we haven’t heard anything from Public Advocate Williams about these topics and that’s why I ran in 2017 and in 2019. That’s who I am. Thank you for your time, Council Gutierrez, and if you want to know why the Latinos are not part of the space, just contact me. You know where to find me.

CHAIRPERSON GUTIERREZ: Muchas gracias. Thank you.

COMMITTEE COUNSEL BYHOVSKY: Thank you so much for your testimony. It was our final witness.

If we have missed anyone who has registered to testify today and has yet been called, please use the Zoom hand function. I'll just check.

I was just told there's no one on Zoom so I'm going to turn it to Chair Gutierrez to adjourn the hearing.

CHAIRPERSON GUTIERREZ: Thank you, everybody. Have a great day. [GAVEL]

C E R T I F I C A T E

World Wide Dictation certifies that the foregoing transcript is a true and accurate record of the proceedings. We further certify that there is no relation to any of the parties to this action by blood or marriage, and that there is interest in the outcome of this matter.

Date February 24, 2023