

BARCELONA – High Interest Topic: Innovation in Top-Level Domains

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KURT PRITZ:

Hi, everyone, and welcome to the -- we're in the dog days of the meeting and I appreciate the energy you have in attending this session that we've been looking forward to for quite some time. There's always been discussion about the rate of uptake of new gTLDs and the amount of success and how success should be measured. And so typically success is measured in domains under management, which I certainly have found that to be the case. And so we wanted -- a group of us wanted to get together today to present to you some of the innovations and new ideas and new business models associated with some of these TLDs, partially to brag about what we've done, partially to explain some of the challenges with regard to introducing innovations, and partially with an eye towards the future and how ICANN, meaning the ICANN organization and ICANN the big ICANN "us," can facilitate innovation in the future because that's what I think our role is, to provide that sort of fertile field to -- to -- we're the ones that are about domain names, right? So to utilize domain names in a way that brings benefit to the global DNS.

So I want to introduce my esteemed panel, many of whom -- I think all of them whom I would regard as friends but they might not regard me as a friend. To my right, maybe not politically is Tony Kirsch who is the head of professional services at Neustar. To my left Stacey King, the general manager of Amazon Registry Services. And to her left, Michelle

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Van Tilborg who's the chief operating officer at .CLUB domains. She's been -- well, all of us have been in the industry a long time. That's either good or bad. Stephanie Duchesneau, program manager at Google, and Stephanie's focused on ICANN policy and new TLDs. And finally Toby Hall at Mind + Machines. So it's just a terrific bunch, and I'm gratified that we're able to present here before you.

So we each have our own story to tell but our stories are integrated in some ways so we'll chat each other up a bit, have a couple of questions for ourselves and save some time hopefully for questions at the end where you can ask us about our personal experiences and any recommendations we have for facilitating innovation in the future and would like to hear your ideas first.

I'm Kurt Pritz. I'm a member of the strategic planning board at U.K. Creative Ideas which is the owner and operator of the .ART registry. And I'm going to talk about a new product we have called Art Records. Toby's going to talk about blockchain domains and the intersection or integration between the DNS and blockchain. Stephanie -- Stephanie will discuss HSTS, it's a protocol, right, and how that's being applied to .APP and .PAGE at Google. Stephanie is going to talk about .BOT and what -- what that product is and really talk a lot about working through the process of introducing innovation and maybe an idea of why you haven't seen a lot of innovation yet, even though it's been percolating in the background. Tony, to my right, is going to discuss brand TLDs, but not just brand TLDs but how they're being adopted and used in different innovative ways. And then finally, Michelle is going to talk -- give her -- .CLUB I think is recognized as the leader in marketing in our

industry and they've tried many different things and arrived at some conclusions that I think benefit us all to hear how they've honed that marketing effort. Anybody have any comments?

So as I said, I'm Kurt Pritz. I work with the .ART registries as a member of the strategic planning board, and I want to talk about what we call Art Records domains and how it relates to the -- to the value of art. And it really starts with a story, and maybe many of you know that this artwork by Leonardo da Vinci, Salvator Mundi, recently sold for nearly half a trillion dollars, but in the 1958 it was a dirty old painting and was recommended for auction at 60 bucks.

And then in 2005 it was cleaned up and somebody recognized it as a fine old painting and sold for \$10,000. In 2013 it was recognized that it came from the Renaissance era and the price became \$75 million. And then it was recognized that it was done by a contemporary or colleague of Leonardo da Vinci and the price increased to \$127 million. And then when it was recognized or certified that it was actually a Leonardo da Vinci, it was sold for nearly half a trillion dollars, you know? So -- sorry, everyone. So what the heck changed? What increased the value? The painting is still the same, right? Nothing changed. What changed is the information.

What makes artwork and many other assets valuable is not the object itself but it's the -- it's the information behind it. You know? What makes this fountain by Duchamp so valuable? I could almost do something like this and sell it. And given some masking tape, I could make a black square, but not so valuable. What makes these artworks

valuable is the information behind it. So how can we take that information and use the DNS to make it more available, more readily available and perhaps be monetized or better shared with the world?

And so the .ART solution was to create this sort of digital record in the DNS called Art Records, and what we're doing is providing a unique domain name, tying a domain name to an art object. So when the art object transfers, the domain name transfers with it. And what does that do? It provides a chain of custody, a form of providence. And that sort of authentication is what provides value to artwork. So just in itself, that provides some additional value. But the DNS is rich, right? It's not just -- it's not just that domain name registration. You can store different kind of records. You could store a digital file that would result in a 3D printout of the artwork or images or more information that people would be interested in.

So how do -- how do we go about sort of bottlizing this information or putting it together? Well, I've been talking about WHOIS all week, as you know. But there's WHOIS information. What we did is create a product we call WHATIS. That's trademarked. And it includes some additional WHOIS records that identifies the artwork. And so for these art record domains the WHOIS is augmented by these seven additional WHOIS data fields. The -- for example, the type of object is a painting, the materials used, the artist's name, the year created, where -- where it is, and so these additional pieces of information identify the artwork. And where does dataset come from? Well, aside from my -- aside from my previous experience in the gTLD program, I've learned not to just make some stuff up. So this is really based on a standard that was

created by the Getty Museum and ICOM, the International Council of Museums. And I should have put the link in here, but there's essentially a book on this "Object ID," how to identify artwork, that's been adopted by Interpol and endorsed by UNESCO and others as the key items for identifying artwork. And so it's a new international standard for -- for identifying artwork.

And our first -- so I wanted to introduce our first real art records registration is yugen.art. And it's a piece of digital artwork. It's not artwork you hang on the wall. And it's very interesting. It's made by this process called SLOimage, and it marries these artistic images with artificial intelligence. It's really quite remarkable. And it's created by Martha Fiennes who is part of a renowned entertainment and artistic family. And actually the entertainer there is Selma Hayek. I didn't get to meet her, sadly, but this is our first art record registration. And that's the -- if you look up the WHOIS fields, you'll see that and that and the art records.

So how does this work? How -- so we've got these WHOIS data fields, but how do we realize value out of this? Well, go to a museum sometime. What do you see people looking at? So they're not looking at the artwork. They're looking at their phones. And as we all know, it's remarkable how much time people spend on their phones looking for information. And so they -- they might go to the museum, take a picture of the artwork, but then -- then they're looking for other kinds of information. So what art records will do is marry that information that's in the WHOIS data fields, the other DNS records that are there, information that the art museum has. Remember, the art museum only

displays like 5% of its available artwork. So this is a gateway for the museum to make accessible to everybody all their artworks, the ones that are on the wall and then that is what's below. And then your phone becomes an access point to the museum gift shop or the donate button on the museum. So it not only will help bring information to people but will help the museum realize benefits revenue out of its vast art collection that it has behind the scenes. So it's really a gateway to making more art accessible to others and allowing museums to realize additional revenue. And how much -- how much is this? Well, even in the 37 most visited art museums in the world, there are -- there are already 176 million artworks. If each one realized a buck a day, then that's \$64 billion in revenue. That's equal to the whole turnover in the art industry of art sales annually. Even if it's only a penny a day, it's still, you know, 640 million, and this, like I said, is just a small fraction of all of the artwork in the world.

So utilizing this sort of tool to provide access to additional artwork and provide revenue-making opportunities to those who own artwork, short of selling it, we think is -- we think is a -- will be of great benefit to the art community.

So just to recap, we use the -- use the DNS and WHOIS. It's a very stable and simple infrastructure relied on by others and will create this record of provenance and add value to artwork. But I'm going to segue to Toby here and Minds + Machines who's going to talk about blockchain because we considered blockchain, too, as a solution for this and they're not mutually exclusive. So some day we might work together

on these things. So thanks very much for your time, and I'll pass the clicker down to Tony.

TOBY HALL:

Good morning. It's a pleasure to meet you, and thank you, Kurt, for the, I have to say, probably the most beautiful presentation I think I've ever seen. I was thinking about how we could get a shredder into this maybe to help increase a little bit more value into everything you're doing, but save the shredder for my presentation.

But before I start talking, I just wanted to sort of get a sense of who's in the room. And I know people are far too grown up to ever do this, but it would be very helpful if all of those who are from the U.S. could put their hands up for one show of hands. That's cool. Now from Europe. That's good. Asia? Including China. Okay. And Africa. Okay. Fantastic. Now next question, how many of you guys, ladies, audience, have got a blockchain identifier today? As I suspected. Okay, that's brilliant. It's really helpful because I just want to try and keep this at a very top line level and not try and get into the weeds.

So to start off, I'm going to say thank you. No, I'm going to go on to my presentation and take us back to a beautiful time called 1992. My last question was to ask who in the room is over 50, and I'm putting my hand up. Yeah, okay. So it's -- I am undoubtedly of the first generation of the web. And what that looked like was somebody who used to smile, used to wear ridiculously colored trousers, but was very, very excited to have a laptop. A Toshiba. This thing was a brick. And even more exciting and something that gave me greater pride, because I never actually was

employed by anybody, I had a Nokia GSM. It was a thing of great beauty. I got onto a data network. All of these things made me really excited. I loved writing. I loved thinking. I also ended up arrested sitting inside that vehicle with a light bluey screen showing from that computer connected to that phone because what I was I doing? I was connecting through all these random numbers to get onto something called the Internet. We were very fortunate to be part of that very early stage of user adoption of the Internet where everything was based on numbers. Whether it was your IP address, or -- anybody ever have the original CompuServe account? I pretend I remember my number, but I think it was like 1011368. But I felt good about that number, and then somebody said you could be Toby or you could have a worldwide address and everything really started to take off from after that point.

So why that narrative and background was really to sort of get us a little bit into the mindset of what innovation feels like and having a sort of a nose for what's coming down the track. And the slide that's up there is just a very simple graphic of where we see the digital environment coalescing around. And if we look at worldwide web, many experts in this room, but in round numbers, 300 million domains, in very loose round numbers, now sit on that, 3 to 5% growth, depending on whose numbers you listen to. We then look at the Internet of Things, much talked about, and 20 billion devices connected -- devices expected to be in that protocol or across multiple protocols by 2020. And then if we look at the area today we are very much focused on is the distributed ledger technology. Now, Ethereum is a building platform. People often confuse it with the cryptocurrency that's used on Ethereum, but first

and foremost it was a development platform. And today there are 43 million identifiers on that platform, and if we assume that has around 20 to 25% of the number of identifiers there are on the blockchain today, we start to get at a number of 180 million. The big difference is, World Wide Web 30 years. Blockchain, or specifically Ethereum, three years. So a massive rate of speed of adoption. And typically, those identifiers are these huge I used to say alphanumeric strings until somebody correctly pointed out -- and I'm sure that person is in the room -- pointed out they're actually hexadecimal strings. So these are A to F rather than A to Z and one to -- one to nine -- zero to nine.

So you can now see why 1992 is so important. It was a seminal moment in my life when I realized words are more powerful than numbers. And we think the trajectory of the blockchain is on a very similar parallel. It is still very tech heavy and based on -- on sort of computer language rather than human interface. And one of the many things the World Wide Web has done exceptionally well, apart from its exceptional processing speed which blockchain doesn't have today, is the fact that humans interact and trust. And one of the core qualities is trust. And the ICANN fabric helps reinforce that trust by providing a framework that helps stimulate the rules -- and I appreciate it's separate to the -- to regulation and law but helps embody and promote.

And so we think those qualities are very, very important. And emerging technologies can benefit from that, if you wish to achieve trust.

So it probably doesn't take a rocket scientist to work out what the next slide is going to show. What we are looking to explore is the notion of

one identifier, two protocols. So for the first time we can look at a domain name, place it into a World Wide Web browser, and it will function and go to anything that you would assume that it would associate to it today, whether it's your email account, your -- your website, your app address, et cetera.

Now what excites us with our partnership with Ethereum is to allow that same name to be put into an Ethereum service or browser and it will resolve to whatever you have associated to that word. So, for example, that long string, so domain.lux is a World Wide Web address as the graphic displays, resolves to the website. Put it into an Ethereum wallet and now instead of your identification being that very long hexadecimal code at the bottom, it is now -- you now have trust of the wallet being a person. And certainly we know from our user groups yes, pioneers often like anonymity, but when we hit mainstream, mainstream humans want trust as a general rule of thumb, particularly if you're sending money, transacting between counter parties. So many of the key players of -- in the wallet world are actually hugely supportive of this.

So we launched .LUX on November 6. We go into general availability. Ahead of that time we already have the largest wallet providers out there wishing to integrate this service. So this is less theoretic. It is a real application.

And why we -- the approach that we've taken is to work with the existing frameworks. So, as a domain name, we work within the ICANN framework.

Likewise, we want to have a service, which is no different to an email or a template -- Web site template that can be provided by our registrar partners.

So this is important. We are not trying to create a self-service platform that somehow cuts out the existing retail channel of today. It's about helping our retail partners monetize and explore new marketplaces.

And, again, that is -- we have been amazed by the support. Often people say this industry doesn't embrace technology and change.

I am not from this industry. My investors say, "You cannot say that, Toby, after two years." But I haven't spent 20 years in the industry is my point.

We only surfaced this concept to our registrar channel in early August.

And to date we now have over 70 registrars globally behind the initiative with 17, I believe 20 after now, who have agreed to provide the enablement piece whereby the name is associated to the blockchain.

So today's talk was simply a case of providing a sense of how we can use the strengths of the DNS to demystify new technologies to consumers. We can use the strength of DNS in the fabric of how Internet names are provided today to help create new sources of revenue.

And we can go on a journey together. Because the reality is none of us truly know what tomorrow looks like. But, if we are using our research and development to explore these areas, we gain the insights that can

help us as infrastructure players but, most importantly, the underlying businesses that we serve.

I'll just leave you with one lasting thought: Blockchain today has a lot of hype around crypto currency. The reality is \$2.1 billion have been invested by corporations year-to-date in research in blockchain. Not a single cent of that has to do with crypto currency. This is about transforming supply chains, how markets interact.

That is a fact. Last year 406 global patents for blockchain. The majority of them from China, 90 from the U.S. These things are coming down the track, and we should be at the forefront as an industry of wanting to embrace and learn and explore it. The last comment was it's a real honor. Tomorrow Minds + Machines is the first time the London Stock Exchange is recognizing innovation by celebrating a product launch by allowing to open the London Stock Exchange tomorrow.

So, whilst we as an industry might often look at innovation and question the hows and whys about it, the outside world is really embracing this. And to have an organization such as the London Stock Exchange recognize these types of developments and its potential significance, we, as an industry, should celebrate that and continue to work on those threads.

So thank you for everyone's time.

KURT PRITZ: Great.

Thank you very much, Toby.

So I don't know what comments anybody else has. This will demonstrate my ignorance.

But, with our Art Records, you can imagine we're working with the Pushkin State Museum right now. And they have 700,000 art works. So the domain names are necessarily not monalisa.art. They're nonsensical identifiers that might be very similar to the blockchain identifiers. So that could be a link.

TOBY HALL:

Yeah. We're always fascinated to see how the crossover is. Because today we think of .LUXE as a unifier. And we're using the most developed blockchain out there as our first sample. But really I think, when you see the narrative evolve, we will be associated -- Luxe will be associated with many different blockchains.

KURT PRITZ:

Great. Any other comments?

Stephanie Duchesneau from Google.

STEPHANIE DUCHESNEAU:

So Google's concept of innovation in the context of our TLD portfolio has looked at new features and functionality added on top of domain names that provide concrete benefits to users. We've considered a number of ideas within this general paradigm.

But today we're going to look at the launch of .APP in May and .PAGE recently as the first open TLDs that are secure by default through the use of HSTS preloading.

HTTP provides two major benefits to users -- encryption and authenticity. Encryption scrambles the data passed between a user's computer and online servers making it less vulnerable to interception or interference.

It also helps to ensure authenticity by preventing man-in-the-middle attacks in which the content that's returned to the user visiting the site is modified or additional content is injected.

HTTPS refers to HTTP strict transport security. It's an additional layer of security on top of HTTPS, and it requires that -- it makes encryption for the domain name mandatory from the very first time that a user visits the site.

Any domain name can be added to the HSTS preload list to ensure that all visitors to the Web site will only be able to visit over HTTPS connections.

The list is recognized by all of the major browsers. And it's updated periodically usually corresponding to browser upgrades.

The steps to add a domain name are really -- to the HSTS preload list are really simple.

And they're set out at hstspreload.org where you can also check whether an existing domain name appears on the list.

Just like an individual domain name registrant can add a second level domain name to the HSTS preload list, a registry operator can similarly add an entire TLD to the HSTS preload list.

This will extend the benefits associated with HSTS preloading to all domain names under the TLD. Google became the first registry to do so in 2015 when we added .GOOGLE to the preload list knowing that we would want the benefits associated with HSTS preloading to apply to all domain names in the TLD.

We followed suit with a number of additional TLDs in 2017.

There's a couple of benefits to doing preloading at the registry level as opposed to the SLD level. For registrants and for users, it ensures that folks get the benefits associated with HSTS preloading right away. As I mentioned, the list is only updated periodically by browser. So that means that, if you're adding an individual domain name to the list, there might be a lag before it's recognized by an individual browser. But that doesn't happen in the context where all domains under a TLD are preloaded.

And it's also more efficient for browsers. Because there's one entry per TLD rather than one entry per SLD. It just reduces the memory network and disk usage associated with it. And this becomes important as the Internet grows and HTTPS and HSTS become more mainstream.

So, just like we launched -- or we added .GOOGLE to the HSTS preload, we followed suit in 2017 by adding .APP to the HSTS preload list. And we were launching .APP as a TLD associated with application

developers. And we thought it was especially important in this context given that these sites were likely to be loaded over mobile browsers and potentially insecure connections.

We worked with our channel to ensure that the requirements associated with configuring an SSL certificate for all domains in the TLD were made known as part of the registration flow. And we were really warmed by the receptivity of the registrar channel to the concept and willingness to work with us by offering discounts on SSL certificates, pointing users to free services like Let's Encrypt where users can get an SSL certificate for free, offering bundles as part of the .APP registrations, et cetera.

And we also saw a response by the industry really quickly to create HSTS -- or HTTPS-compatible landing pages for .APP domains in response to the launch.

Given the success of the .APP launch, we followed suit for our subsequent launch of .PAGE, which launched just a few weeks back. And we're also continuing to work with other registries to see if other folks are willing to add their TLDs.

We've already had fTLD Services add .BANK and .INSURANCE to the HSTS preload list. And you can imagine that the security associated with preloading would also be important for these regulated industries and financial services in general.

And we're working to grow the existing TLDs and ensure that we have high-quality registrations that are actually used. Because, ultimately,

the benefits associated with preloading are not just registrant facing. They benefit every single user who visits the site. The more we can drive traffic toward them, the greater the benefits.

As I mentioned before, one of the great things about this innovation is its simplicity. It requires absolutely no engineering work to add a TLD to the preload list. It can be initiated simply by sending an email to hstspreload@chromium.org.

I've linked to a couple of resources on the slide.

There's the hstspreload.org site, which shows all the sites for adding an SLD or a TLD to the preload list, as well as letsencrypt.org, which is a service through which registrants can get a free SSL certificate, as well as providing my email.

So, if you're interested in learning more or potentially exploring adding an additional TLD to the list, please feel free to email me.

TONY KIRSCH:

Stephanie, this is Tony, for the record. We're exploring this with .NEUSTAR and looking at our own top-level domain. And, without sort of giving it away, there are a number of people that we work with who are looking at doing this as well.

Your experience doing it with .GOOGLE and how you managed that, have you found benefits with that so far?

STEPHANIE DUCHESNEAU: Yeah. As I mentioned, we sort of knew that, given they're all brand sites, that we would want everyone to know that we were providing security by default for all of the domain names under the TLD. I think that's the core benefit. You know it's ensured, from the very first time that a user visits the site, that it's going to be over an HTTPS connection, which is also important in the context of a brand where you're very focused on ensuring authenticity and security.

TONY KIRSCH: I think the other part, just for everyone else in the room, is that, once your TLD is preloaded, it's not having to do each domain over and over again. To me the benefit at an operational level is do the hard work, get it preloaded at a TLD level now. And every domain subsequent to that is automatically into the browsers.

STEPHANIE DUCHESNEAU: Right. Absolutely. It's automatic. Once you do it for the TLD, it applies automatically to every single SLD that's registered underneath it.

UNIDENTIFIED SPEAKER: A question, Stephanie. Does that help SEO with Google?

STEPHANIE DUCHESNEAU: Yeah. Actually, Google announced a couple years back that there is a little boost provided to TLDs that are HTTPS.

UNIDENTIFIED SPEAKER: I think that's a massive innovation for the actual businesses and consumers.

KURT PRITZ: Thanks, Stephanie. That was great.

I'm now going to turn the microphone over to Stacey King of Amazon.
Hi, Stacey.

UNIDENTIFIED SPEAKER: Good luck, Stace.

It's all yours. Should I go first?

TONY KIRSCH: Nice, nice. Hi, everyone. For those I haven't met, my name is Tony Kirsch. I lead the advisory business at Neustar. And, fortunately, I spent a lot of the last 10 years working with dot brand TLD clients, of which we sort of manage about 150 or so of.

But it's been a journey, a significant journey, that I thought today I wanted to share with you some of the evolutions and learnings that we've had and see if some of these innovations that we're seeing might make sense for you.

I guess maybe just a quick history lesson for those that might not be as familiar with this.

Initially, in 2008, I guess, Kurt, when we were doing new top-level domains and a proper discussion and moving toward applicant guidebooks, we didn't really have a concept as such of dot brands and what that meant.

I think the initial program was, obviously, to add competition and choice to predominantly the generic space.

But it started to get some speed. I remember vividly Canon coming out in 2010 to say that they intended to apply for it. That was pretty big news at time for those of us that were in the space. And it really shifted the mindset of folks saying well, actually, what would happen if I went and had my brand on the right-hand side of the dot? What does that mean for me?

We skipped on a little bit later. By the time we finished the application round in 2012, just under 600 companies had applied for their own dot brand.

As I sit here, we're talking the top end of town. Obviously, the application fee was not insignificant. So you tended to find that this was very large companies who were making the investment in that. Obviously, not the same as having a domain name. You needed to have a registry and all the obligations that come with running a piece of the root zone.

So, you know, it was a big deal. But the reality was at that point in time I think most people did not have a clear strategy as to what they wanted to do with their dot brand. Many had it as a defensive application to

protect their trademark. And others more as let's get it. We'll see what happens. We're not sure.

But I think that was pretty consistent -- with a few exceptions, it was pretty consistent that most people were not really doing it with any great level of desire to start moving forward.

But over the last four or five years, we've sort of managed to get quite a bit of activity. So you'll see now in the root there are 542 brands that are delegated. Almost 15,000 domain names exist in dot brand spaces around the world. And you'll see a pretty consistent growth, around 25% year on year, of domains that have been registered by organizations in their own branded namespace. And they're doing that for a variety of reasons. I'm going to show you some examples in a moment of some of the ones that I think are cool that you might think are innovative.

And then as you can see here, there's some world organizations that are doing -- I am going to give you some more detail around these in a moment, but some really solid amounts of work in particular with places in Europe, predominantly Europe, that are starting to embrace dot brands as part of their digital and marketing strategy.

So we created a site. A small little plug here. We created a website called makeway.world. And we collected all of the brands, stats, data, and examples. And we thought this would be a cool way to show this innovation and give it a central point.

And, you know, it's been fantastic for us to show how dot brands are being used around the world because not everyone is the same. But I was very fortunate to work with a lot of these clients. And what I was learning was that in the same way that a bank and a retail company may be very different in terms of their operations, the challenges that they were having in their digital activities were actually very, very similar.

So we've started to help people understand different models of how we could use them. I will give you sort of four at the top here, I think four main types of usage that I will go through in just in a sec, and then a few innovations that perhaps you might not see in your day-to-day life.

So the first one to do, what I would call, the full transition was the British bank Barclays. And back in 2013, I think it was, or '14 program, they moved this site from barclays.com to home.barclays. No small feat, okay? When you have got a new domain that no one is aware of and you have got to pick up a site and educate your internal and external audiences, that was a really strong for play for Barclays and Canada, as I mentioned, who had now redirected or moved their entire website off their initial domain, for example, onto their dot brand.

And others have then said, Okay, we're not quite ready to move our entire site just yet, but we might look for ways to do promotions. So, for example, there is a domain for q8.audi, one of the new vehicles, built on .AWS that Stacey did. I saw that in almost every airport I went to throughout the United States for a while, which was fantastic.

Google, as Stephanie mentioned, has done some great sites on the .GOOGLE domain.

Some of you may have met some of the people here from SNCF. If you don't know the brand, it is the French train rail network. And they moved from a very long and cumbersome domain onto this oui -- obviously oui meaning oui -- yes in French, I'm sorry. And now that's one of the most visited sites in all of France that uses .SNCF dot brand top-level domain.

Others have taken sort of a different approach whether it's because they wanted to go more slowly or whether they wanted to perhaps just use it as a marketing campaign or something like this, and it includes really large organizations. This is careers.ford. If you type in careers.ford into your phones today, you will see what I mean. It moves to the Ford careers page. It's not complicated. It does what it says on the TLD.

Similarly, cloud.cisco, some sort of thing there.

And then we wanted to get into places where you can see -- where are the customers' eyeballs? If we are doing in TV and radio and print, that's one thing. Of course, we are all very, very heavy social media users.

So we started to look at the next evolution of what was a bit.ly-type URL shortener that most of us have used in our day-to-day. And you'll see, for example, you can see some very large companies down the left that have done this. If you see a go.zara/strippedshirt, it clearly says a lot

more about what that promotion is all about than a traditional bit.ly link. So we are starting to see better branding appearing in the links within social media.

Okay. And then very quickly I thought I would just give you a handful of other ideas of things we're seeing around the world. The first one was canon, again a very strong leader in this. This was only two months ago, I think, roughly that they came out and said that all of their internal staff will be using a @mail.canon address. They have just completed that migration.

At Neustar, we built a search engine that referenced our own content and our own product suite. So if you go to search.neustar, you type in what you're looking for in relation to our company, you get a result set that is specifically related to our company and what we would like you to see in those result sets.

We are seeing innovation in terms of locality. This is berlin.audi. And I'm even seeing -- I mentioned dvag before -- it's another general organization -- starting to promote their internal staff. I think Annette - - I haven't met Annette, but I'm sure she's lovely. She has her own website now and her company gives it to her to promote herself and to show her alliance and work that she does with the organization.

My good friend Ben from Google, we have already talked about HSTS enough. We have written article and video. We've been talking about why we think HSTS is going to be the next thing really as a serious security improvement for dot brands. We talked before about

preloading and why we think that's really going to help create a far more secure Web.

And we're also looking at ways where dot brand domain names can work across different forms of media, both in typing, clicking, and social media or even voice activity and how we can map those in and around the design experience that big companies are looking for. So, for example, do you -- should you be able to use your phone to speak into it and open an app with the hotel -- your preferred hotel company and things like that.

And ultimately I think where this heads is about the data and the intelligence that you're able to acquire when you have all of the links being managed by one central place. And if you can do that on your brand, whether it's email and service and things like that, the visibility that we're hearing from CIOs around the world and their ability to want to bring all of this together in one central branded and controlled space I think is also going to be -- one of the keys is how the next year or two rolls out for top-level domains, in particular for dot brands.

Thank you. My email address is up there. I will pass back to Kurt.

KURT PRITZ:

Great job, Tony.

Any questions?

Do you have your finger on the button, Stephanie?

STEPHANIE DUCHESNEAU: I just have the next slide.

Yeah, so in addition to applying for a number of open TLDs like .APP and .PAGE, which I touched on before, Google also applied for a number of dot brand TLDs as part of the 2012 round corresponding to our major brands and products like .ANDROID, .YOUTUBE, .GMAIL for our .GOOGLE launch.

The first cases that we launched on .GOOGLE were very relevant to this space, our registry on registry.google and our domain registrar on domains.google.

But then in 2016, we saw our first nondomain-related launch in the TLD with blog.google for Google's primary blog, the keyword.

At the time, Google was in the process of a major blog relaunch that was consolidating a number of disparate blogs under a single page. And our brand team struggled to find the right domain name for it and eventually settled on blog.google as the best -- as the best site.

Since then, we've seen a number of fast followers to it, design.google which Tony had presented before, diversity.google, crisisresponse.google, and more.

And we sort of have anchored our strategy around .GOOGLE as a place for these core brand-related sites where we can convey information about ourselves as a company and our values. And we found that it really benefits in this context from having these really short, memorable domain names that are really indicative of what sort of content that you're going to find there but also provide an active signal

about the affinity of each of these concepts to the Google brand. So we're continuing to work to bring more sites onto .GOOGLE as well as to ideate and think of other innovations that we can use our other TLDs, both our open TLDs and our dot brands for.

But, yeah, one of the things that we found was it was really important to have that first major successful launch. And we've seen a lot more willingness to move and to have other -- other sites with a similar concept move after that initial blog.google launch.

TONY KIRSCH:

So I'll just add to that, for anyone in the room that found this dot brand topic interesting, there's a meeting this afternoon. It is the brands and domains group. It starts at 3:00. Martin Sutton who -- maybe you could put your hand up, Martin, and just wave to everyone.

If you are interested, please get in touch with Martin. It starts at 3:00. All people will be welcome, and we will do a little bit more of a deep dive on brands.

KURT PRITZ:

With that, I want to recognize the newest dot brand, .AMAZON and Stacey to our panel. So congratulations finally. We're all very pleased. And please take the mic.

STACEY KING:

Thank you. So similar to Google, Amazon got into this space -- we've said this a number of times -- to look at different ways that we can innovate within the TLD space.

We have currently delegated 40 generic TLDs, and we have about 12 dot brands. And here I want to walk you through with the generic TLDs, how we approach innovation and some of the bumps that we've hit to get here. One of the reasons I wanted to address this is we hear all the time: Why haven't you launched more TLDs? Where is the innovation? Is this not coming?

And so I wanted to just give a sense of when you are trying to do something a little different in this space, some of the things that you may go through.

So when we look at the TLDs, we are approaching each of our TLDs as a separate business with a separate business model behind it. And we have an interest not just in the domain name as a URL, as a marketable identifier for a site, for worldwide website, but also in a broader space DNS as a whole and what are some of the different ways that you can use a TLD and DNS along with domain names to introduce some new and interesting products for consumers.

So the one I wanted to talk about is .BOT, which is a TLD we've been working on and is live right now. .BOT is a space right now for chatbots. It's dedicated to conversational interfaces, both voice and text. When we looked at how are we going to build out these TLDs that are specifically targeting either a specific consumer or type of technology, we realized that a lot of things that we're going to need to do is

introduce up front ways for us to determine do you actually fit within the space.

So validation, for example. We wanted to make sure that we were able to validate that an individual actually not only had a chatbot but that chatbot was operational.

We wanted to look at are there additional services that we may need to provide to chatbot developers, whether it's something that we can provide or link them to third parties that offer services. We wanted to look at how do you create more of an open space for that community as it's building out? This is still very much a nascent market. It's early days in its development. So how do we become a part of that and help build out that space?

We went -- and, again, this goes back to sort of the way we have been looking at all of our TLDs. We went initially to a number of different registrars and partners within the community when we started looking and saying, look, for the TLDs that we're looking at, we know we're going to want to do validation ahead of time. We know that we're going to want to offer these additional goods and services and really build it out as more than just the domain name sale itself.

And what we found -- and this is going back a number of years -- is that for the most part the reaction we got was, no, we don't want to collect any additional data. We don't want to have to build out anything in connection with validation. We don't want to pass on any products or services. We don't want to link people to anything else. Really, you should just offer the domain name. They'll take it from there. Even to

the point where we had people saying, Here is our sample registry/registry registrar agreement. We think this is something that you should adopt. Don't build your own if you want us to sell your domain names.

Now, I'm going to qualify this with this is not necessarily a complaint, okay? You're dealing with registrars that have -- in many cases, they have very slim margins, right? They are trying to onboard a lot of new TLDs. And so when you're faced with people coming saying, they want to do something different, it is a hard -- it's a hard thing to say, yes, we're going to onboard this and what comes around the corner was someone else.

So the approach we took is we would build out a place where for every one of our TLDs it would link into. Consumers would be able to come. They would do prevalidation. We would present them with the registrars selling the names. We would also inform them of what was available with a particular domain name. We would send them back to the registrar to do the registration, and it would build out from there.

For the registrars, the idea is that if you connect to this one time, it gives you access to all of our TLDs.

So in order to actually get to that place, we then needed to build that space out. And that takes time. It takes development. We needed to coordinate with a lot of different parties to make sure that what we were building out would be something that registrars and others would be able to log into.

We then look at individual TLDs, and this is where .BOT comes in.

So for .BOT, when you go in, the first thing that we want to do is to validate. Well, how do you validate live chatbots? Chatbots aren't built off of just one platform. They're not built off of one framework. And so we need to go and look at, okay, for all of the chatbots out there, what are the major -- what are the major frameworks that are being used? How do we validate against this? How do we build the functionality so that we can do automated validation?

Then how about the next level? Who are some of the smaller frameworks? Well, what do you do with all of the developers who are building their own chatbots and not using the frameworks?

To build all of the functionality that allows us to do that validation, again, takes a lot of time. It's also something that you have to test.

Once you have launched a TLD, once you are selling domain names, as we all know, it's really hard to change the rules and to say, no, we're going to go this direction.

So one of the things that we've had to look is how do we -- how do we beta test in this space where we're actually having someone go through, do the validation, register the name, and make sure it works. So we have to release these things in layers as we're testing and trying to find out what works and what doesn't work. And that's just for text bots.

How do you deal with voice conversational interfaces? And how do you validate against those?

So all of these things take a lot of time and need to be released in different levels to make sure that we're getting it right, that it works, and that people can use them.

Then on top of the actual just domain registration, again, we're trying to look at how do we build out for the chatbot community as a whole. And so we're looking at building other things that are available for people who are registering domain names and people who are using chatbots. And so this is just one example. We launched a blog that has information for developers, including developers who are building their own bots, people who just are getting involved, the hobbyists in the chatbot space.

We're connecting with a variety of partners who can offer their services to chatbot developers and looking at the additional services that we can offer going forward to bot developers and their end users.

Again, it all takes a lot of time. And so I think when you're looking at why is there or is there not a lot of innovation, I would actually just point to there probably is a lot of innovation going on. What you just need to take into account is this takes a long time to build out. We have to come up with sort of unique ways that we're going to beta test and find out what works and what doesn't work in this space.

And that gets back to -- TLDs themselves are very much, especially with where we're going now, a nascent market. And so you're going to see there are going to be a number of TLD models that come out that don't work. There will be some that come out that are just for niche

communities and will have small numbers of domain names but a high level of use. And then you will have some that eventually will be big.

And so we need to allow this market to develop, and we need to allow it to come to some of these new spaces.

KURT PRITZ:

Thanks. That was really interesting. So it's fun watching these presentations because then I bring up all the websites on my phone and I'm checking them out.

Michele, do you want to go?

MICHELE VAN TILBORG:

Thank you. And it's great to hear my fellow panel people here talking about their innovations. Some of them even I wasn't aware of. So it's really fascinating to hear the investment that these big companies are bringing into this space to move it forward.

So innovation for us has been in the form of marketing as well as helping our registrar channel and registries -- other registries monetize their investments.

At the core of this when we went into the space, there was this common belief that in the old days, right, TLDs were just a commodity. And oh, my gosh, what are we going to do, we have .COM and these fantastic legacy domains. And then there was going to be over 1,000 more domains. At that time, I was in the registrar space, and everybody's hair was on fire. Like, how can we possibly do that?

That's still somewhat of a conversation that is happening. How profitable is it for us to give our shelf space and our resources to new domain extensions? That's critical for them but it also obviously critical for us as we've made these large investments. And many of us, you know, have done this not only with money in mind but also there's a philosophy that's very almost philanthropic I would say.

So how do you break past that, I'll call it urban myth. So for us, I'll share with you our thinking and how we've approached it.

So first for us, it was critical that we emphasize the global applicability and reach of the domain. Specifically for .CLUB, there was a lot of research gone into how broadly could we market and present the domain. We believe that it's a domain that is actually about passions, whether they be about profit or nonprofit. So this was key to our marketing strategy and how we approached the business.

So it may sound trivial, but for us, what our research came down to is this. We're one of the first extensions to launch, so we knew that we needed to support, obviously, the channel as a wholesaler, but we also knew that we needed to appeal to end users. So we knew we needed to take a dual marketing strategy. That's why we decided to launch big; right? It was important to us that we really get out there with a bang. You need that momentum to keep you moving forward. And we believe that's helped to contribute to our success.

In the registrar channel, since we were one of the first domain extensions to launch, we had to, you know, present the belief that we were investing in the extension and, hence, one of the reasons that we

did this large celebrity tie-in which was 50 in Da Club. 50 Cents, a very popular, you know, celebrity. Hopefully most people recognize this. And it did work; right? Because the registrar channel needed that confidence that we were valid, that we would promote, you know, an economic reason for them to have us and to have us in their search.

So next, for us, obviously we look at this dual. We actually have a very broad, you know, horizontal reach, but there is also very specific verticals. So at the core of our strategy, we've really developed a comprehensive segmentation profile that reaches through these different verticals, the obvious ones that you see on the screen here, the obvious clubs, as well as are now starting to broaden it out to other things that are in the eCommerce space. For example, Gartner published a study that was showing that there was an 800% expected over the next few years in these kind of subscription eCommerce services. So we have been able to come in and not only focus on these nonprofit traditional obvious verticals but also this implosion that's occurring now with microbrands. If you look at Internet Retailer, you'll see that these are the trends. and it's also a trend, these subscription boxes and recurring orders on Amazon as well, and others.

Here's some examples. You know, again, looking at our segmentation profile, we work well with startups as well as any large company that has a loyalty program, as well as we said the traditional. So again, I would encourage you, if you're on the registry side, to take that additional step for your channel partners and do the work as though you are the one marketing to the consumer, even though we're not typically in those shoes. They need this help. Obviously there is over a

thousand new gTLDs, and it's greatly appreciated, from what we've experienced in the market.

Lastly, yeah, here we -- as I was saying, we like to do a lot of collaboration as well with other registries. We believe that it lifts the whole industry.

There is still a great deal of awareness that needs to be driven, and we are always looking for opportunities where it makes sense, where it's relevant to collaborate with others. Here is an example of one we did with .BAR, .BEER, and .VODKA actually at the bar and nightclub show. We've also started to reach into other vertical conferences, such as there's a new one, I think it's called SubCon, where large brands are going that are moving forward into these kind of subscription-based models. It might be complementary. It's a great way for them to get recurring revenue, recurring customers.

Then at the end here, I want to briefly touch on a new innovation that we've been working on that many of you may not be aware of. We call it names.club, and it basically is an additional tie-in into the whole .CLUB eCommerce as well as a way to get businesses and startups into a really good domain that they can afford.

What we've been able to do -- we've been able to amass 31 other new gTLDs, including some of my colleagues here, MMX, Radix, and also.SHOP, onto the platform. We've just started to roll it out. We're in the early stages. Our first implementation was on name shape. This is specifically for the channel; again, first to help the end users, businesses, to allow their customers to buy a premium domain that

would typically not be accessible at all for them. So they make a down payment, they stay in the registrar's purchase funnel, and then they make payments over 60 months. We're very excited about this program.

As I said, we have built it for the entire community, not just .CLUB, and it's something that we'll be aggressively moving forward with over the next couple of years.

You can see some benefits here. Obviously we're all looking to monetize our investments from a registry point of view, so it's a great opportunity to do that as well as a way to support our registrar channel. As Stacey correctly said, the margins are razor thin on some of these registrars. They want to do more with us as the registry community we find, and this is yet a further way for both of us to monetize our relationship. And again, we believe that it, obviously, serves the customer well. That's always at the top of the, you know, priority list.

Thank you.

I am Michelle Van Tilborg. You can reach me at Michele with one H, no hell, M-i-c-h-e-l-e @get.club.

KURT PRITZ:

Thanks, Michele.

So I have a couple questions for the group. I'd rather -- We'd like to hear from you. Ted at the tech table or someone, I wonder if you could zoom to the agenda slide so we can kind of see the list of speakers.

Sue is going over there.

So some of the things I want to think about are how do we respond to those who say there's been, you know, low uptake of new gTLDs and that's affected -- affected the amount of innovation and how that's --

TOBY HALL:

I would question that statement. Look, there are around -- we know what the growth rate of country codes are, we know what the growth rates of Verisign are, and if you put that core industry together, it's -- as I said, it's going to be 3 to 5% growth. New gTLDs, a lot of independents that don't have the marketing now some experience that some on this panel know and understand, yet in spite of that, we have seen close to 25 million registrations in effectively three years. Now, that is -- that is a significant growth rate.

So has it -- has -- have we seen any unicorn successes within that? No, we haven't in the sense that has the first unicorn emerged into public consciousness using a new gTLD? No. But if we take date .WORK, for example, which is one in our portfolio, Tech Crunch, first six months of this year, \$167 million of VC money went into new-start businesses on .WORK. You know, there used to be a historic statement that said VCs won't touch anything if it's not on a known -- if it's not on an existing extension. And these aren't replacement technologies. We're not arguing the case of one or the other. We're just simply arguing the case that success within businesses, and obviously the brands pieces, but let's not forget -- forget the unicorns. They're coming up on us, and they'll be around us sooner than we realize.

STACEY KING:

If I could just add on to that a little bit. You know, and again, when you look at the process, I would agree with you 100%. This is actually still early days. I think the numbers that we're seeing don't indicate that it is not a success. It's actually early, early days in our space. A lot of consumers don't even know that these exist still. But also, I think you have different levels, and when I talk through a little bit what we have to do to get one of these out, especially when you're talking about a different type of model where you're trying to bring in new types of domain name registrants. We're not just servicing the same pool of consumers. You know, Amazon or Google, you know, we are fortunate enough that we can take the time to build these out; that when we get resistance, we can say, okay, we're willing to actually invest and move Internet2 until we can show people, okay, this is what we're trying to do and this is how we're going to benefit everybody. But for your one-off registry that comes in with a great idea that doesn't have access to VC money, that doesn't have a big company behind it, you know, we -- you know, to get this space for us to do our pre-validation through, it took us 14 months to negotiate the RSEP. And again, it's part of the process here, but if you are an individual and you don't have that funding that allows you to go through that time to negotiate with the registrars, to do 14 months in an RSEP, to then start building out and take the hit on your funds while you're trying to get to that point, it's devastating.

And so looking at how, some of the ways we can help these smaller registries get forward and actually get these things launched and start seeing that will be a benefit to everyone.

KURT PRITZ:

And .ART is a smaller registry, and we shop for a lot of painting go through a set of RSEPs and then trying to work through developing a business model where we want to launch 700,000 domain names to support the Pushkin state museum, you know, 43 cents in naming fees and finding a registrar that will do that development work for us.

And I also want to just mention that, you know, I'm wary of domains under management being the measurement of success where it's not at all, you know. Innovation is a measure of success. I was whispering to Tony about his presentation that he was talking about the number of domains in brands where the use of a brand isn't dependent at all on the number of domain names but, rather, how it's used. I remember in a previous presentation, Gg Levine and .PHARMACY was bragging about 500 domains under management and how encouraged she was. And I was kind of shaking my head but then she let us know that .PHARMACY covered over 50% of the drugstore storefronts in the United States through those 500 registrations. So that was remarkable progress.

TOBY HALL:

I would echo that sentiment. Obviously we are prelaunch and somebody said how many registrations? And I went, well, today I think it's five. And there was this look of, "Oh, my God. This is bad." And I said, "Yes, but of that five are the four largest exchanges and three of the largest wallet -- four of the largest exchanges and the largest wallet provider, representing about 20 million users, so I'll take that as a bad day.

The point is it is -- it is the extension into new audiences and new extensions and understanding the distribution into those channels and helping, to your point, helping bring registrars access to that world. And I think as a registry, obviously we look at this from a registry perspective, and it is about helping -- helping distribution, which touches both on Michele's point and a number of points made by fellow panelists.

KURT PRITZ: Hi, Phil. Do you have a question or a comment?

PHILIP CORWIN: I do have a comment. Is this working?

KURT PRITZ: No.

PHILIP CORWIN: Can we get this to work?

KURT PRITZ: No.

PHILIP CORWIN: It's working now.

KURT PRITZ: There you go.

PHILIP CORWIN: Thank you, Kurt. Philip Corwin. I'm policy counsel at VeriSign.

I wanted to comment generally on the potential relationships between the DNS and blockchain. And, Toby, I found your presentation very interesting, and I agree that there's very valuable potential synergies between the DNS and blockchains that can enhance trust and have other very useful and valuable outcomes. But this is an area I'm looking into, and I want to make the community aware that there is some developments that are quite disturbing and that can undermine trust. I'm not going to get into specifics here at the mic but there is one major blockchain that is selling identifiers that are trademark.blockchain, and I'm not talking about dictionary-word trademarks. I'm talking about unique corporate trademarks. And this is just blatant trademark infringement. It's unacceptable. Basically blockchains are a bit of the wild west now the way the Internet was 20 years ago.

There is another major blockchain that is selling existing top-level domain labels including some of ours and some of yours as identifiers, and that's going to mean that the -- if you have -- one of them is dot com. If you have name.com in the DNS, there's going to be a different owner of name.com in that blockchain. And that's not going to build trust. It's going to build confusion and undermine trust.

So I think my point is there needs to be greater recognition in the DNS world of what's going out there with blockchains and a dialogue between the industries to encourage good practices and bad practices so we can work together in ways that build value and trust and worth for everyone and so that we don't have to go down the path of litigation and legislation to address some of these bad practices.

So thank you very much for introducing the topic, and I think it's one that the domain community is going to be discussing a lot more in coming years.

TOBY HALL:

I think -- and again, I'm glad you raised that point and that is our whole strategy here of being a DNS first, because it means that the names have to follow a regulated convention. And certainly our message and why the London Stock Exchange values what we're bringing is actually bringing the first sense of regulation and protection and guidance into this arena.

And we recognize that responsibility.

PHILIP CORWIN:

Yeah, and what I just said is by no means directed at what you're doing. I heard nothing in your presentation that caused me concern. It's more generally about what's going --

TOBY HALL:

Exactly.

PHILIP CORWIN: -- on out there.

TOBY HALL: But there's a big piece and the education is with the corporates. and this is what a big driver in our piece is, is as much with the corporates as with the end users.

PHILIP CORWIN: Thank you.

KURT PRITZ: Thanks, Phil. Jothan.

JOTHAN FRAKES: Oh, hi. And, Kurt, thank you for assembling such a great panel, and I observe most of you are members of the Domain Name Association, and I do want to make that observation because we're working heavily on innovation, and we're having conversations around marketplace growth.

I want to pay a compliment to the GNSO and to ICANN for having a panel like this as a high-interest topic because the majority of panels and topics that have been going on this week are many, many things that create friction for the market and actually stifle innovation and growth in the commercial space. So it's really wonderful, and for those of you in the GNSO who are listening, please do more of these. The registries

and registrars giving space to commercially focused things besides just at the GDD summits is really, really inspirational and we do need to remember that ICANN is funded by, you know, in many ways, the growth in the space, and we've seen them have to make budgetary adjustments, you know, accordingly because that slowed down and there's a lot of activities that do slow that.

I wanted to comment on what Mr. Corwin said to say that just like any alternative root-type activities, you know, some of the activities within the blockchain have been outside of what's called ICP3. And I've noticed that Minds+Machines and other groups have been working to try to create more nexus with the existing system. And I think there's a lot of opportunity in blockchain, but you do have to always avoid those -- those stumbles.

And finally, you know, with respect to the activities of the Domain Name Association, you know, as I continue working as the executive director there, we're actually expounding in innovation in domains, in top-level domains working group that I hope that people will be attracted to participating in as members. But thank you for assembling this panel. It's been a really fantastic learning I think for many people, and there's a lot of innovation that's going on in this space.

KURT PRITZ:

Thanks, Jonathan. And as far as having these panels, there were 13 applications for presentations and panels for three available slots. I think eight of them were GDPR related or some. And by -- there was some sort of voting mechanism, and by that voting mechanism, the

people in the community actually voiced a preference as this -- for this being one of the top three of the 13. So to any of you that participated, we're really grateful that you want to talk about stuff like this in addition to stuff like that.

Yes, sir.

MANEL MEDINA:

Yes. Thank you very much. I'm Manel Medina from esCERT-UPC in Barcelona. I would like to ask if this payload strategy of domains provides some kind of trustworthiness on the pages that are loaded because you know that if you get a certificate for a web page from a well-known traditional site, they check the identity of the company, but in the new sites that provide cheap or free certificates for the websites, they don't check the identity of the people. So there is still possible for the -- for the malicious organizations to get certificates that allowed them to look trustworthy while they are not really.

STEPHANIE DUCHESNEAU:

Sorry, I don't quite get the question. There is a requirement for the HS -- HSTS preloaded domains to have an SSL certificate configured, if that's what you're speaking to, and the free services are available through services like Let's Encrypt.

MANEL MEDINA:

Thank you.

KURT PRITZ: Go ahead.

JOHN LAPRISE: Thank you. John Laprise from ALAC. I guess I just have a comment. I find it regrettable that so little -- so few of the speakers had products that were actually for end users like dealing with issues like security like Google it and, to a lesser extent, Neustar.

I understand the market incentive and the concept behind all this, but -- so little innovation is being focused on the needs of the very end users. Thank you.

KURT PRITZ: Thanks, that's a good comment. James strides to the microphone.

JIM GALVIN: Thank you. Jim Galvin from Afilias. Let me try Medina's question a different way. I think I understood the question that he was asking. His concern was about Let's Encrypt and the fact that it allows anyone to get a certificate really with any name that it wants on it. And HSTS would seem to suggest that any certificate that you're using for your SSL website would be sufficient to be listed. So I think he was asking about the security of that and the identity of those sites that are in HSTS and whether that's really added security or not. And if you could speak to that question, that would be helpful.

STEPHANIE DUCHESNEAU: Yeah, I might actually point to my colleague Ben who's in the front row to help on that one. Either now or after the panel, whichever.

UNIDENTIFIED SPEAKER: (off microphone).

KURT PRITZ: James, can you repeat the question, please?

JIM GALVIN: Sure. The issue is about Let's Encrypt allowing anyone to get a certificate with any name in it and, you know, how HSTS is actually added security, given that you allow anyone with an SSL configured certificate that could come from Let's Encrypt, for example, how that's added security or not, what's really going on?

BEN McILWAIN: Yeah, so the benefit of SSL is that it encrypts your traffic in transit and this protects against very real attacks of people injecting ads or spying on you or, you know, maliciously modifying your content. So this is very, very real security gain there. So that's the encryption aspect.

You're more speaking to the authentication aspect with like getting the green lock bar in browsers which user studies have shown the majority of users don't really pay attention to anyway. So that doesn't deliver a huge amount of security benefits there. So just taking websites that wouldn't be encrypted and then encrypting them is actually

measurably improving security, and it's not particularly losing anything because there's no like real downside of encrypting something that is unauthenticated. Like it's still adding protection.

UNIDENTIFIED SPEAKER: I didn't see where Medina went to sit down. I just was looking for a nod that that answers his question. Yes?

STACEY KING: So actually, if I could just address the comment before quickly. I'd actually disagree a little bit with you. And I'll take -- again, I'll just look at .BOT as an example. So your end user, there's two users here. So you have someone whose buying the domain who's developing the bot, right? In part, the validation allows us to know that there is a live bot and to hopefully prevent some of the malicious bot use that you see out there. If you look at end users, their customers who are using bots, all of the studies and consumer surveys say they want to know they're actually talking to a bot. They don't want to not know that it's a bot. In fact there's been recent legislation in California looking at should they mandate that if you're operating a bot. And that's where actually the domain name part of it is interesting because .BOT actually is signifying to a user that they are actually speaking to a bot, right? To the degree that those end users look at domain names, right? And so I -- I think I would slightly disagree that everything that's put out here doesn't take an end user in mind or doesn't take security in mind.

KURT PRITZ: Thanks very much, Stephanie. Marie.

UNIDENTIFIED SPEAKER: I'm just here to say there's a remote question, so if we can have the microphone for that table turned on, Ted? Thank you.

REMOTE INTERVENTION: Thank you. We have a remote question from John McCormick, hosterstats.com. How can an expired domain name be unlinked with a blockchain wallet or is this a method of ensuring a permanently renewing domain name by the registry?

TOBY HALL: Sorry, that was quite hard to hear. Is it possible --

KURT PRITZ: Could you repeat the question again, please?

REMOTE INTERVENTION: Absolutely.

TOBY HALL: How can an expired -- the question looks to be, how can an expired domain name be unlinked with a blockchain wallet or is there a method of ensuring -- that was a typo -- permanently occurring domain name by the registry. Okay. So there are two pieces when a name is associated. Here's a very specific example of a name being associated

to a wallet. So there are two dissociations that happen. One is obviously if somebody is choosing to deregister a name. That name is - - there is a step where the owner of the domain name can cancel -- can cancel between domain name to wallet and equally, if you are a wallet owner, normally -- and you have funds in it, you normally would, as a backup, double-check to reassociate the wallet to something else or just keep its original hexadecimal identifier. So the wallet is always independent of the name and that remains completely protected.

KURT PRITZ: Thanks.

I see the magic "thank you" -- "thank you" slide meaning we're out of time. But thanks for your participation, your question. You guys were great. Thank you very much for the work that went into preparing these presentations.

So this is kind of the end of the meeting almost, so I hope it was very successful for you and everybody have a safe trip home. Thanks very much.

UNIDENTIFIED SPEAKER: Many thanks.

[Applause]

[END OF TRANSCRIPTION]