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GOVERNANCE"
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BLOCKCHAIN: DO WE NEED KILLER APPLICATIONS BEFORE THE
REALIZATION OF DECENTRALIZED INTERNET GOVERNANCE?
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>> DR. WEI-CHUNG HWANG: Good morning, everyone. This session is about the application and relationship between structure and Internet govern incontinence. What is Blockchain and what Blockchain can do. In many countries this is Blockchain technology and also relations but I think that we are not clear what Blockchain technology will involve.

So in this session, we hope we can have some kind of discussion about what is the key application of Blockchain and what Blockchain can do for Internet Governance. And here we have five speakers here. The first one is another one but she's not here. So maybe later she join us. Maybe we will introduce her and the second one is Mr. Pretty pong. CEO of Internet corporation. Is staff company for Blockchain technology and its application. So later on we all introduce what the inter-corporation, what they do and what their viewpoint of Blockchain application. And we also have two remote speakers. The first one is Mr. Floyd. Floyd, can you hear us?

>> MR. FLOYD D'COSTA: Yes, I can hear you loud and clear. Hello, everybody. Can you hear me?

>> DR. WEI-CHUNG HWANG: Yes. Floyd is the cofounder of BlockArmour. He will speak about Blockchain technologies. We also have one remote speaker, Yichen chew.

>> Yes I can hear you loud and clear.

>> DR. WEI-CHUNG HWANG: Is an incubator for young generation for staff business. And the other one is Wei-chung Hwang, I work for industry technology institute.

The first one will be pretty pong and he will bring his have you point of Blockchain and development of Blockchain in China. Please go on.

>> Hello. Hello. Okay.

>> Good morning, everybody. You can call me put. CEO of corporation. It is Blockchain implement based in Taiwan. We developed this product that we call, we name it Batu. Baturim is the Blockchain. So that you can do the Blockchain in one can it. You download it or install and you take that to block share. And then you can develop application on top of the Baturim.

And then we start community that call Blockchain out fit. This is Thai company for -- in the Blockchain view. So in the Blockchain landscape of Thailand, we cannot find we wish to know how the people in Thailand used to be the Blockchain. And then we cannot file one report. How we get this, the correct data. So we open the Baturim for final in our community in Blockchain. So we open and we ask them how they use the Blockchain. How they plan to use the Blockchain in your education. And we collect the data like six months ago and then we think it's really useful for us. And today I would like to share to you. So this is who won the Blockchain in Thailand. So you can see startup and individual is most interesting of the Blockchain. Follow this, the SME. And SME and education. So government. And the last one is last organisation who is involved more or less in the Blockchain.

So next they plan to apply the Blockchain. So you can see the financial and digital. So in use case finance. So this is the main area they would like to use the Blockchain.

And the next IT department. They release about Blockchain into -- employee, staff, data. Something like this has the organisation internal. So come follow -- interesting use case is the some guide need to -- ownership of the -- in Thailand. Buddha omelet is where you update. So they need the check the owner. When your Buddha amulet cost you and everyone in the Blockchain network know you got stolen.

And then we summarize interesting business use case. And this is summary of the interesting use case. In case they will use the Blockchain in supply chain and logistic efficiency. IoT in the retail industry. Next one is the Blockchain, back office. They use to check internal employee, internal assets, the chain of assets, computer, things like that. And many, many Internet organizations know how they own the assets.

It is about the law. Law need in smart contract technology. They will use electronic content. And then the last one is the transfer of Intellectual Property rights or real estate rights.

So we update in late August and then we share you. If you interest to interact with Blockchain, you can contact us.

And then this is updating. More people in Thailand interested to get to minor process more than 300 from last year, yes. I think this is how we know about the Thailand people get involved this technology.

>> DR. WEI-CHUNG HWANG: Okay, thank you. And I would let all the discussion and questions after all speakers finish their presentation. So if you have any questions, wait for a while.

The next speaker will be another one from Thailand, still there in law office. Go ahead Nantawan.

>> MS. NANTAWAN WONGKACHONKITTI: Good morning, everybody. Okay. So we talk about Blockchain Thailand. I think he already talks about everything about the survey having been done in Thailand and you know what potential we are getting to use the Blockchain like he was saying, right? But, really, are we ready? Is Thailand ready for what he said?

So what my point of view is policy maker. Working on amending. You know in Thailand we have 200 is electronics act written a long, long time ago. It's time to update. And we update and we include adoption. Blockchain. That will unlock everything, right? Because even though we have Blockchain technology, even though we have innovation, whatnot, but if the law hasn't changed, nothing can go on or move forward because we will start with the policy, with the law, with the legal stuff. And also we have to talk about data privacy law. We were coming and we heard about it. Anybody in Thailand, we heard about this a lot, privacy, privacy act. Hopefully it will come soon. And when it comes, you have to think about Blockchain technology, as well, right?

Also, data residency also sovereignty. Also we have to consider. These are the things that Blockchain use. So if we haven't thought about it, the policy maker hadn't thought about it, we have to push up. There's two-way going down, coming from the top down and bottom up. So maybe as a citizen voice, Thailand should talk about their residency and sovereignty which is nobody talks about it right now in Thailand. So that's very important, right?

Possible in Thailand to use Blockchain. Separate sector, you know? So government. We have e-text several years ago, many years ago people in Thailand start using text, submitting the text via Internet. But they're just submitting. But now with pay, what do you call it? The government come up with the pay -- pro pay. Now is even faster for people who submit it, you get a refund in a day, I think. Before it's like a month or something. But now it's even better. So taxes is easy to cooperate with the Blockchain because we already have online voting. Although we are not using that right now. But potentially we could. That will really transparency of all of the democracy that we're going to do next coming up election I hope. Transparency, of course. We need that as citizens. We need to have transparency, right?

ID management. We have ID card, right? Everybody in Thailand we have ID card? We have a chip in there. Have we used it? Probably not. Correct? We have a chip. Very nicely. But we hardly use the chip. The use of the chip has, if you have PTI in there, you have a private key. That's going to go on and on. We could use all of these to identify who we are. We can use all of this to do electronic transactions without going, actually going to the offices, which is open only 8:30 to 4:30 Monday through Friday and who going to have time for that, correct? So that's going to be the one.

Paperless. Of course. Have you ever gone to a Thai office? Government office? I'm telling you it's like this pileup of the paper. I don't know how they search it. I don't even know. That's why every time we go the Thai office, they will say come back in a week because they have to search for it. So if everything is on paperless, that will be easier to search. If you look for something. If you look for the

land, I don't know. Mother-in-law gets lost somewhere, I don't know. So that would be easier.

Of course, Blockchain is very famous or popular in financial sector, of course. We know that. Insurance. We can use that, right? We could use enterprise letter of guarantee which already have done. Thailand has gone bank just start this, which is very nice. But in small group, in prototype right now.

Money transfer, so, yeah, commercial banks are one way from Japan to Thailand and that can be done already. Trade finance. P-to-P transaction.

The next sector is corporate sector. We talk about healthcare. The healthcare is very important because of what? Our medical record, correct? We don't want to -- even the doctors. We don't want other doctors to know hour record, correct? Only our doctors unless they have our concern to talk to other doctors about our sickness, correct? So that's important. There is of course the money and the land and the houses come with it. Energy. Very important. Supply chain management. The cross industry also important in this sector because of what, IoT? You heard of IoT, right? Internet of Things. It's everything of everything, correct? Now you just know, I don't know. They know where you are. Can track you wherever you are.

Data storage. Blockchain has a lot of this. You know about Blockchain. Already talks about it. A lot about data storage.

Big Data is part of it. If you can use Big Data to analyze something, that will be even better to use with the Blockchain, correct? And you can foreseeing something will happen you can predict something if you have Big Data to analyze not just data but transactional. Cybersecurity. We heard about these things so long, but why it's important? Blockchain can use it.

The use cases just talk about it, Thailand's already been done. Enterprise. They say they will issue about 20 percent of all letters in 2017. And then it will increase to 25 percent in 2018 which is very good number. Think about it, right? And KBank has the largest share of the enterprise letter of guarantee in Thailand.

The second one has already been done, like I said, yeah, commercial bank. Transfer money from Japan. Submit to SCB only, one way. The first way 2017. They say from several day to 20 minutes. It's very nice if you're in Japan and try to send money to Thailand.

The upcoming set, the hours, security of exchange Thailand what Blockchain-based market. In the third quarter of 2017, they will come up with something. And student loan, think about e-loan approval. Set up voluntary institution and our office in 2018. Hopefully we will reduce the paper up to 60 percent. And also time saving from six months to two weeks. Students will be happy because they will get money faster.

Well these are just a survey from IBM from 2016 and he is saying the clock is running. So I will go faster. 200 banks 19 countries. Invested in Blockchain already by 2018. So it is coming for sure, right? And 200 government leaders in 16 countries, also 4 percent is going to be done thinking about it or doing something in 2017, which is this year. And also healthcare, also 16 percent using.

In the future, I think Thailand can use Blockchain version 2.0. Digital currency, smart contract. Health record, real estate. Energy trade. Insurance. And of course digital management of the Copyright and IP assets. So those are the things that I think will Thai people or Thailand can use it. Thank you.

[Applause.]

>> DR. WEI-CHUNG HWANG: Thank you. Two speakers from Thailand

that we learned that I think Blockchain is equally for all countries that even in some countries that we see in Thailand there are a lot and already some use cases of Blockchain. So I think the new technology maybe help the emerging countries to develop, to have divert ICT and infrastructure to improve the infrastructure. So I think it is very good opportunities.

      And the next one will be Floyd from BlockArmour. Floyd? Floyd?

      >> MR. FLOYD D'COSTA: Hi, guys. Can you hear me?

      >> DR. WEI-CHUNG HWANG: Yes.

      >> MR. FLOYD D'COSTA: Okay. Thank you so much. You know, it's interesting to see a couple of things here especially Nantawan mentioned the type of security but also the progress governments and institutions are making. I remember mentioned about how a large chunk is also the government trying to look at this space.

      Two points before I actually go to my slides and I'll go to them quickly. Point number 1 is I was on a call with a team in Dubai who's pitching that Dubai government plans to make it a smart city. And the mandate is that by 20, all government documents will be exclusively on the Blockchain. So you cannot bring a paper document and say here is my document. No. It will only be on the Blockchain, right? And this is the way you will have many of the countries especially in Asia, which is smaller and easier to implement such a thing taking the lead to say, you know, we are not testing, we are not piloting it. Yes, we will go through the whole process of doing a pilot, doing a POC, but by 2020 we will only have the entire government running on Blockchain. And that is part actually of their smart Dubai government process, right?

      So it's great to see that it goes beyond SMEs, large enterprises, education institute, but now it's also the government which says hey, this is what they're doing. Not just the government. Now you have a big scramble where all the enterprises are running to kind of also understand Blockchain because in the next three years, we have to comply with what the government puts out.

      So, again, it's great to see that.

      So nevertheless, coming to the subject, and, again, I guess Nantawan has a great slide that looked at from industry perspective. And this is a really complicated slide but I'm looking at the one, let me take a step back. If you look today not just in the Thailand but not a single day goes by that you don't hear about Blockchain technology.

      Now, I'm not talking about scientific journals and trade magazines, I'm talking about mainstream media, television, the news, newspapers, magazines, everywhere, right?

      Now, if you look at Blockchain, you can split it into two halves. On one side you have the whole crypt oh currency space, bit coin, et cetera. On the other side you have the Blockchain technology where you're looking at how enterprises, government institutions and everybody can actually leverage the Blockchain technology. Not the currency aspect of it.

      And then, again, now if you look at the bottom of the slide, this is a different view than what Nantawan just explained. You look at it from what might be the use cases, right? And again number 1 you've got currencies. And that's the most popular one these days, especially because of the huge fluctuation of what you are seeing in the digital or cryptocurrencies. But you can also have a whole lot of other use cases across industries.

So number one is the whole asset space where you can convert shares and other forms into digital assets. And the SCT are taking the lead and saying hey, we will launch a digital force by next week, if I remember the slide correctly. But also things like logistics and trade finance and a number of other places, but even things like Intellectual Property rights, correct? So that's the second bucket that you're talking about assets.

The third is the whole contract space. And digital rights management once again. But also having a chat with a large insurance company, potential client of ours which says you have proof of stake. What we want to do is insurance. How can you have your insurance completely on the Blockchain? And then a smart contract validates whether you're eligible and immediately disposes your insurance based on the policy you purchased, right? So you do have some insurance that already now issuing new policies just as a pilot on the Blockchain to experiment. But how can you just take the whole lengthy process and automate it completely, right? Hey, here's my policy. Here's what happened to me. Here's my claim. You don't need 7 people sitting behind a desk to validate that and cross check the contract, the smart contract automatically validates and says, hey, you're eligible for X amount and it automatically discloses the amount in your bank account or whatever.

The next is around data where you're talking about digital identity. I think mentioned about the smart cards with the chip in it. Hey, the identity, you don't -- what if you don't have to carry a card around and you can just use things like your retina or a smart card, for example, that automatically can validate all your information. Including medical like you presented, which is about, hey, I have a lot of data. But my doctor right now usually only have data 3, 4 and 5. That's where technology like Blockchain facilitates this.

And then the last part, which is P-to-P. And this is the most interesting space when it comes to things like Internet Governance and things like we are discussing today. Today, yes, you have a central system where everything comes from central servers and it's directed via the Internet, so, yes, you can monitor, yes, you can govern that. But when you're talking about things like cryptocurrencies and Blockchain technologies, it is all P-to-P. It's all person to person. How do you control that?

So I was in an interesting conversation with a regulator. And this was around large sums of currency. You're talking about money laundering and things like that. For example, if I need to send a million dollars from Singapore to somebody in Thailand. I don't have to go to the central banks and things like that. I can simply buy a million dollars of bit coin. In Singapore. Send it from my wallet to your wallet. Directly without no middle person. And all you have to do is cash that. You can convert $1 million of Singapore dollars to bit coin and you automatically have this. This makes things so much more efficient. It doesn't have to go through the banks and the clearing houses and things like that.

But the point is: How do you record for it? How do you -- and, again, now I'm talking about a small sum. It could be large sums of money that could simply show up at a country and nobody will even leave alone monitor it or even know about it. And especially some of the smaller countries which have capital controls which says hey, you cannot send or take that much money out. And many, most of the countries have these kind of laws in place, right? How do you enforce it when you can't control things like cryptocurrencies and things like that, right? So very interesting use case. But, yeah, just a different view if you're looking at the bottom half of the slide that says yes, you can take the industry use of it. And industry use

cases and that's great when, you know, enterprises are looking at it. But then this also offering you a different view to say what are you trying to improve? What are you trying to secure, right? Each moving to the next slide, sorry, I'm just going to scroll this. Yeah. Again, Blockchain can be, you know, a path or a tool or a path of technology where three things happens, where trading occurs how can I improve efficiency and trust is at a premium and people need protection from identity theft. Because of the technology being so secure and being cryptographic, in fact, and decentralised distributed, no one person controls it and it's controlled by the network, right? And, hence, Blockchain has the potential to radically change the future of transactions and record-based industries.

And, hence, probably that's why you see so much, if you ask me, over 90 percent of all use cases or all progress made right now is pretty much in the financial service space. Or as we nowadays call it, FinTech, right?

Again, in the last two or three months, I've spoken to central bank regulator and a clearinghouse. Now, remember, these are organisation, government organizations mostly that are very risk averse. They are the last people to be talking about instant change, right? Also because they come from -- it's a huge impact. You're talking about national level impact and things like that. And, hence, they look at everything from the eyes of risk, right?

Now, when these organizations start talking to you about Blockchain technology and how they can adopt it, two things emerge, right? Number one is, hey, this technology is something good. It has wings. It will fly because the most conservative organizations are talking about it. So the rest of the organizations better get on board quickly.

But the other thing is also a question that I was asked in a Forum that I was on a panel on as to what might be, again, assuming that in the previous example that regulators and other institutions can not control many of these use cases or many. Transactions on a distributed network. How can they then -- again, since the conference Internet Governance, how do you manage, how do you manage all these things? And then in my opinion does what I keep saying to them every time I get this question. The best way is to participate.

Number one, how can I participate and be part of this network rather than sit outside and say how can I control it, right?

The next, once you participated, you understood it. The next is: Of course how can I build it or facilitate this ecosystem? Sure it's distributed, sure it's decentralised but it needs someone to kick it off. And hence that's where you go from government facilitate participation and facilitation. And that's where I guess a lot of the -- especially government organizations can play a more active role in the technology, right?

Very quickly I'm going to finish this in one minute now if you go to the next slide. What we are building and I think Nantawan mentioned cybersecurity.

Now, if you look at the last couple of months, you didn't want it, you didn't ask for it, but enterprises in Asia or people in the arbitrator are pretty much the most hip when it came to WAN an cry and these two that came through. Didn't do anything wrong. These are just malwares that simply penetrated your laptop, your mobile, your desktop and shut you down. Two very interesting things happened.

One, it just locked you out. But, number two, the only way to get out of it ransom ware that these malware requested for was in bit coin, which is also very interesting, right? You're looking at cybersecurity but you're also looking at how it

can be misused. So that's where we are looking to address Blockchain technology to address cybersecurity.

Now very quickly. Again, this is a slide about Blockchain and I'm sure you have some of these. But why is Blockchain so awesome when it comes to cybersecurity? Very quickly three reasons. Number one, it's cryptographically secure. Which means it is natively cryptographically secure. So it comes by its innate nature itself to provide security.

Number two it is distributed and decentralised system. The technically if you want traditional system will take the database and the whole application sinks. In a Blockchain system, you take one note out and nothing, nothing happens. If you want to compromise the system, you need to take out 51 percent of all the nodes.

So point number 1 you need to know how many nodes are there to calculate 51 percent. Once you know that, you need to figure out where they are to be able to compromise them. So that's what makes it even more secure.

And the last thing is the -- factor. If you're trying to have hack a block-in system. You are recorded irrespective of where you go in or not, the data is locked.

One last slide is a shameless promote. But this is what we're building. So we're building a Blockchain powered cybersecurity system to secure critical infra. Critical infra is not email and things like that, but within an enterprise or a dominant distribution, the most, the 20 percent golden Nuggets that they want protected at any cost.

So for stock exchange, it is the trading platform for a kind of inline system it's the air traffic control system, for example. For nuclear plant, it's the system that manages the fusion reaction.

So what you build to secure, to provide an additional layer for impenetrable security for this critical or cloud infrastructure.

Guys, I'll leave it at that and let the next speaker take over. And probably then join in the discussion at the end of the presentations. Happy to take any questions after.

>> DR. WEI-CHUNG HWANG: Thank you, Floyd. Floyd just provide some opinion that Blockchain have the possibility to decentralise Internet Governance. But we took care of the security issues. And how to do that is a question.

Okay. Next one is the speaker from I didn't Yichen Chu. Keep your presentation brief.

>> MR. YICHEN CHU: Once I want to go to the question of in the beginning. Actually from my observation and perspective. There might be no real clear presentation for Blockchain, but maybe in the future. Because just like the example. When we see the Linux 20 years ago and the status now, they are everywhere. So let me begin my presentation.

So this is one of the POC I'm working on. We have several POCs underway in Taiwan, includes energy application, digital treaty and the ISO process monitoring to improve the quality.

This one is very interesting I want to address. I think most I was watching a movie called "catch me if you can" played by Leonardo and Tom Hanks. The movie just showed the question. How you can trust the guy in front of you? Just like mine. After I found the problem, I even more questioned my résumé.

So, you can see here is so real if we try to affect somebody's identification. So just like the point I address on the PowerPoint, we are doing the proof and source of trust. And try to -- right now to some stakeholders like one university and one bank.

And the financials of organisation.

Right now we are working on other subjects especially for the IoT. Because why we block the problem. You can see there are various reports of the IoT is coming. You can just ask yourself right now how many IoT devices are you wearing right now? Cell phone. I think this is mandatory. Maybe some smart watch. Or even you can have some -- so the big IoT devices means each person will have more than six devices connect to the Internet.

So the problem is very real and huge. So, yes, project can solve that. But by observing the IoT challenge, we found the concept can solve the problem. But does it exist in Blockchain? So does the Blockchain pass its own? Just like the blocks on the chin. We can see the Blockchain have the major scalability issue just like, we know the bit coin might have some problem. They may go to new bit coin or old bit coin. But this is one of the Blockchain's challenges, especially bit coin.

If you have -- maybe you have rapid coin or the other one BDH, you will find that when the time you want to trade normally you cannot trade at that time. So it's interesting.

So right now we are focusing on the different technology with code -- this is the one we are working on. We are using the directed -- technology.

It is interesting that need to gather transection by group of the whole Internet. Approved by the core Internet is a vast concept from bit coin or the Code the first generation or second generation Blockchain. But we can define the best of the most. Normally I will call it the neighborhood of proof mechanism. Just like right now I try to borrow $1 million from Wei-Chung. How many people help us to approach the transaction or -- the transaction? The whole Internet? I don't think so.

So right now we are working on this foundation. IoT A foundation which is founded in Germany. They are issued the Tang oh technology and -- technology. And so we cooperate with them and try to speed up the maturity of the technology.

So last the security. As Floyd talks a lot, but I just have one word. Maybe we just don't need the old fashioned skill concept but by building the new trust for the Internet because right now the Internet already more than 30 years old. It's very old. And at the time people designs the Internet, they don't think they've got so many devices and the website will connect you to Internet. So the problem's really huge.

The last one. So, yes, I also address some problems and the charge. Just like IT for everyone. Very quick example from the IC2020. Issue by Microsoft and Accenture. And we need the new people call for really the IoT mission to mission and people to people. We might block on the chain if we are talking more corporate can adapt the built in ledger technology because the Blockchain's legacy actually -- most of the corporate I visit, they are not really, really into establish a Blockchain. But they are willing to know that.

In Taiwan right now we are working on the software plus combined with disability ledger to improve the work. Right now we are also working on open force. We will have a new standard for that. So it's interesting technology. But maybe we can expect right now just like maybe the histories just 20 years around. And I think there will be more smart guy, maybe not more. But will help us to define the new standard maybe of five generations of Blockchain. So that's my presentation. Thank you.

>> DR. WEI-CHUNG HWANG: Okay, thank you. I think most speaker about Blockchain and IoT. So what Blockchain can bring to IoT maybe we can discuss later.

And the last presentation will be myself. And since time is since we won't get more time for discussion, then I will go very quick. Actually in Taiwan we have very big ICT technology digi-- it is investment in government for future ICT the technology to support the future development of industry and economy.

And we can see that for the digimus plan, there are some fundamental technologies. And Blockchain is one of the most important technologies for Blockchain.

And here is our Blockchain innovation technology system. Just summary that there is some academy and industry practice and also very some corporations between the ecosystems.

Here just I quickly go through two applications. The first one is with Blockchain. This one we try to make the system more transparent than before with Blockchain transparency. That means that everyone can trace their donation and what is the flow of their donation in realtime? So that's part of what we have finished this year.

And the second one, we call it's musiconomics. It's founded by some music creation industry. They want to try to deliver music directly to the consumer. They don't want to go through the third parties. So they use Blockchain technology that can trace the creation of music. And when the user just listen to the music, the author get paid in realtime. So that's the project that we will kick off this year.

So in the next, I will keep all the time to the open discussion. Here is some of the topics this year. First one I think we have to make it clear that are we talking about the same Blockchain? Because we have a lot of intonation. Because, for example, someone say there's a permission or permissionless or some say it's a public versus private Blockchain. Right now there are consortium Blockchain. And we have some fundamental technology proof of work or proof of state? So when we are talking the Blockchain, we have to make it clear that what kind of Blockchain we are talking about. This is very important.

And the second one is that as many speakers just said, that -- of Blockchain. Maybe IoT or P-to-P or some big application that we can discuss.

The slides disappeared. Okay. And the last one is Blockchain and Internet government. What Blockchain can do for Internet Governance, I think the audience really concerned about the type of Internet Governance. But how can we do that? We use Blockchain for decentralised Internet Governance. I think it's very unclear. So I leave the question to all of us. Okay, thank you.

So if you have any questions, just raise your hand.

>> My question to any panelist is why would we use Blockchain instead of existing PKI for proving authenticity records?

>> DR. WEI-CHUNG HWANG: Who can answer this? I know that Blockchain and PKIs are different technology that PKI's more centralised. All the identification are controlled by a central certificate authority. But for Blockchain, the system is decentralised. This is the most important difference.

And the second one is that for a Blockchain it is anonymous. Users can be anonymous. PK system most users have reallied at this. So I think it's very different.

Any other speakers have other opinion?

>> I think PKI and Blockchain we can combine it and use it. Blockchain is designed for anonymous user. But PCI designed for KYC, who are you? And we can combine. You KYC, the user, and then list the identity to send the data, the key data with the Blockchain. So you can combine.

>> Yeah, I think I agree with him that Blockchain, if you use certificate, we enhance the security of using Blockchain. And many of the technologies using Blockchain combined with the KBI already using authentication as an individual to enhance a security user Blockchain. Yeah. So it's ecosystem.

>> Actually I come from Korea and I come from the Korean -- agency. I am not expert on Blockchain but expert on -- identification. And also we got same problem in Korea about why using the Blockchain PKI. Anyway I use Blockchain using PKI technology and Internet technology inside. And it's not authority of technology. Blockchain's more bigger kind of platform or kind of the concept. Not one technology. So maybe I believe it is why they want to talk about the Blockchain here not only for the PKI.

And also and I would like interest in something in Korea what happened on the Blockchain. So actually the -- and the government got the Blockchain groups and also many panelists talk about the availability of the Blockchain -- through the Blockchain. And also maybe there's no typical layer of service now. Yet. So maybe in Korea the same but we just almost preparing application under industry. Not industry. Just financial sector. They just preparing service there. And also little different in country because PKI and Blockchain is problem. Why the financial area making this kind of service and using the technology of the Blockchain.

Anyway, just key point is in Korea, we just want to develop the Blockchain service under financial systems. So there are two kind. One is the stock exchange; the other is the financial banking systems.

And also preparing some kind of -- financial service and also they want making some certification system by the Blockchain. So maybe end of this year. Maybe they are just making up into the real world can use that.

So and also preparing some consumed and inside. And then we just -- and the private sector service. Financial service. Because two kind of consumer like this. So we just care about the final system but we are just preparing the governance service and private sector service. But we don't know what kind of services are there. But end use just preparing. So not sure the company and the government and agency. Just took together about how can we be making the new service and the good service in Korea society. Yeah, briefly about Korea's issue and Blockchain. Thank you so much.

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>> MR. FLOYD D'COSTA: Hello, this is Floyd I just wanted to add one more point. Two more points. One to the gentleman who asked the question. I don't think you should replace every PKI-based identity and security solution with Blockchain. That's not the idea. But there are cases, there are very select use cases where Blockchain is more beneficial. So it's not like you're going to throw away PKI and things like because there are use cases where that is using perfectly. But, yeah there were use cases where Blockchain can be leveraged a lot better. So it's those select places.

Sorry, just one request. Can I request a Korean guy who was speaking to connect with me, please? I left my information with the administrator of the system.

>> Okay, that's to you, okay.

>> DR. WEI-CHUNG HWANG: So question?

>> Hello, everyone. My name is Lori and I'm from China and I also work in Blockchain industry. So I may give a brief introduction of how this industry in China. When we talk about Blockchain, we may talk about bit coin because it's the first

application and the most successful application right now. And we know that China currently probably have almost 50 percent mining power of the world. That means that the minors in China and around the world, they support this system because we know Blockchain that needs to support the decentralised system. So the mining power or the PoW of this mechanism is very fundamental source.

But not only talking about Blockchain, now we are talking Blockchain 2.0 or even 3.0 because you are not just using bit coin. Bit coin just financial use case, which is very successful. But we also natural world which we call Blockchain next generation, or the Internet.

Maybe some people haven't recognized it yet, but I'm really happy to see that government and private sector already seeing that because Blockchain, they change the mining, the thinking mind because they change from very fundamental like protocol, co-pat like TCP/IP to the different layers like application layers. So different layers like from very fundamental protocol to the application. In this to promote to make it happen. So we will see our very new Internet world. Before just for information on the Internet. But after the Blockchain, we transfer value.

And bit coin is the first application which we can transfer value on the Internet. But in future, we will have more than cryptocurrency. We see more cryptocurrency just for the Internet. And that will be very near.

And since past two years, I have already like witnessed many applications. Maybe they haven't been like killer app yet. But very soon we will experience very new.

And so I have one question to -- I don't know whether he is still online.

>> I'm online.

>> Thank you. I heard you mention that your work is in proof of --

>> Proof of existence.

>> Existence. Insurance?

>> Yes.

>> LMAN CHU: No. Right now we are not right now working on the bank or maybe some we can code which company, we issue many. Just like your résumé. How I can validate your résumé is you or not. So this is application measurement. You can see this is application like the child support.

>> Okay. So it's more related to with ID or certificate part?

>> LMAN CHU: No. More like more close to the -- yeah. So that's why we need to work with different stakeholders like university or maybe the issuer of the certificate or maybe some other like in Taiwan we are working with the bank. They also issue some sort of case to the users or maybe their employees. So we can build from the source. So if you are talking about your résumé. Just like we were using the, you can see some people they are famous or they are real. So they are just real like that.

>> I think document notary system.

>> Yeah.

>> New kind of consensus, I guess. Okay. Thank you.

>> DR. WEI-CHUNG HWANG: Any questions? It's about lunchtime but I guess we will still have more 15 minutes, okay? 15 minutes, right?

>> Blockchain, learner of Blockchain, so please spare my if it is too naive. But Blockchain's basic concept of the Blockchain I believe is the decentralised nature of the financial -- this is basically a new economic and financial model as compared to traditional model where we had the traditional central point where all the

transitions pass through. But the central point cannot be ignored. Because this is the point from where the government gets its taxes and its cut, right? And then that revenue is used to basically run the government and do all of the projects and whatever the government does, you know.

So if let's suppose in the coming years, 20 percent or 30 percent of the financial transactions or 40 percent of the financial transactions start happening on the Blockchain, does the government's revenue start to decline? So up less the government's trust or the revenue is somehow insured, I just be clear. Unless the government gets its cut of what is happening in the block chain, do you think that this model will be allowed to run?

And, secondly, does anybody see that, you know, I mean if everything goes onto the Blockchain, what would happen to the government? Whereby will the government earn from?

>> Very good question. I'm just part of government. It's very good question. I think the tax. The governments do get tax. But you're right. I mean government has to be part of it just hike the first slide was saying. Government, they have to consider Blockchain technology, how they use it and how they can be part of it. Just like you said, we decentralise everything. The money doesn't go to the government or the middle person, you know.

But still there's a small fee or zero to zero, eventually become zero, I think. But there's still small fee when you get the miner's still mining the Blockchain. Still some fee. And that fee -- I think the government has to somehow find that fee to become taxing. They have to do something about it, otherwise like you said it would just peer to peer. We talk to each other, there's no middle person. No taxing. Government gets most of it from tax or fee. So in future, they have to think about that hike you say. I think they should.

>> LMAN CHU: Yes, I still think the government have the role in the function because right now we can see no matter the government or the financial companies like bank. They don't need to convince people to use Blockchain. But we trust them. So that's why the bank, especially the international banks, they are adopting the Blockchain because they can make more money. That's the incentive and motivation of why they will use the Blockchain.

Just like the government. We also need to think what's the incentive and the motivation for the government? I think, yes, tax is. And I also believe that maybe, yeah, maybe in the future, we might not need government. But how many years later? Maybe 15. So the point is: The interest owner of the Blockchain, actually the Blockchain will help them to speak of the efficiency and the transparency and without convince people. Now, the challenge of the project is why we need to build the solution or service based on Blockchain especially we already have already. So that's my perspective.

>> DR. WEI-CHUNG HWANG: Okay, thank you. Question?

>> From Japan. I think usually it is not like the financial support or the financial system. The bigger issue is that if you take out all the financial system from the hands of the banks and the government, then basically there is no way to control economy anymore because it will -- and secondly there is even no way to monitor the economy anymore.

And then if it's global, then it can be that one kind of big group can control other companies economy easily by changing the Blockchain how do you say the whole mechanism from technical point of view. And how do you trust such people of

member of Blockchain. Biggest issue of the Blockchain. I'm sure that when we are going to introduce Blockchain, it will be fixing these issues. How far you want interference from the mechanism to the other side. Like not only the government but also maybe from the police departments and whatever. If you see what we are experiencing the Internet, of course we are talking about the system is currently getting old. It's over 30 years that it's been in use while the usage has been changed a lot. And then the biggest lesson we learned was that since we did not put security when we design IPv4 or 6, so the big issue is if you will design a new mechanism to transfer information among each other, then we have to be sure that security is designed -- it is based on the security design from the beginning. Not after we see the operation of it and see problems that we start attacking one by one because the bad guys are much better and much, how do you say? Better funded than the good guys.

>> So it's not too difficult to abuse the system. And especially if it's brand new. You have to be prepared that there will be more attacks and even the old system which will make the new system more fragile than the old system.

>> Very important. We learn that even one year ago, the owner. So I think the security design is very important Blockchain. But I think the technology right if here. But how can we do that? We have to work on that. In the future. Is there any question? Just share your opinion or idea. Because we may have 10 minutes.

>> I just want to add another point. I think after the Blockchain technology merged that they require more collaboration among nations or states. It's not just as a private sector thing. I think government or international society should have more collaboration because like bit coin, the value just transferred around the world and there's no order for this. But from this perspective, I think the government can collaborate more to dig into this technology and how to use it for all the people. So thank you.

>> Sometimes answering the Blockchain many in Korea just talk about something and security. And also Blockchain cannot be all systems. Just one other platform or technology in their security area. So I would like saying just do not leave too much. So even the bit coin and even the other coin already exchanged. So anyway, I believe maybe five years, ten years, maybe of the new technology, it's not the Blockchain. So we just use this kind of good platform and good concept, we can use that if we need it. But I also is more than but just wake up thinking only one technology is not a big deal. Is not all my things. So it's this time. Just use that, this kind of technology.

>> Just one of technology we need. Blockchain is not everything, right?

>> (off mic comments)

>> DR. WEI-CHUNG HWANG: Okay. If there is no other questions or opiniony would like to conclude this session. So let's keep study and see what we can do to more decentralise Internet and applications. Okay, thank you.

[Applause.]

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