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## **The Blockchain and Cryptocurrency – Coming to a Track Near You?**

### **Moderator:**

**Sue Schneider:** Founder, eGaming Brokerage, Editor-at-Large, Gaming Law Review and Economics

### **Speakers:**

**Matthew Cackowski:** Director of Security, Audit, Compliance, AmTote International

**John J. English:** Partner, Managing Director of Sports Betting & Technology, Global Market Advisors

**Earle G. Hall:** CEO, AXES | GSA Blockchain Chair

**Ms. Wendy Davis:** Alright. Thank you. Welcome back. First of all, I'd like to thank AmWest Entertainment for sponsorship of this panel session. I'm really excited about this one.

This is one of those panels that I know I can tell you absolutely for sure we have never had a panel on this subject before. I think it's really exciting to be the first to bring this topic to our racing community here: The Blockchain and Cryptocurrency — Coming to a Track Near You?

Our moderator today is Sue Schneider. She's one of the world's leading experts on internet gaming industry, which she began monitoring in 1995 and I have to say, has been, for many years, our go-to resource at the university.

She's always so wonderful to share her knowledge with us. She also was instrumental in putting this panel together for us, so I wanna, first of all, thank her so much for that.

She launched River City Group, which produced the largest i-gaming events in the world as well as key industry trade publications such as "iGaming News" and "The Internet Gambling Report".

She currently is a principle of eGaming Brokerage and consults on a variety of other independent projects within gaming. She's also editor and chief for *Gaming Law Review* and is really one of the, like I said, our go-to people and an expert in the gaming industry.

Sue, I'm gonna turn this over to you, and again, thank you for putting together such an esteemed panel. We can't wait to learn all about this.

**Ms. Sue Schneider:** I want to give you an outline of how we're gonna handle this. We have a really good panel of experts here.

What I'm gonna do is have Earle Hall, who is on the end, is going to be giving you a very short nuts and bolts so that you have some really basic information about blockchain, in particular.

Can I ask if you've heard of blockchain?

Do you feel like you have a little, tiny, rudimentary knowledge of blockchain? Can you put your hand up?

It's still fairly new. Okay, good. Then, we have John English and Matthew Cackowski who are gonna be part of panel discussion after we go through this initial presentation. With that, I'm gonna turn it over to Earle and we'll go from there.

**Mr. Earle G. Hall:** Hello, folks. Hold on. Technical issues startin' off. That's cool. I'd just like to give a little bit of an introduction on blockchain, a couple of the basic principles that we might need to think about later on.

The first one, blockchain is simple. I've been doing blockchain since my time in the army in the 1990s. Logistics transport used blockchain principles to do delivery points a long time ago. If blockchain is going to become popular in our industry, it's because it's going to solve a problem. If not, it won't make it.

What are some of the problems we have to solve? Number one is security. Anybody here have an SPG Marriott account? Today is not a cool day to be a part of the Marriott group. I would hate to be the CTO at Marriott today.

The second thing is cost. Has anybody noticed ATM transactions are going up and continuing to go up? Why? Because of the insurance premiums on transactions because of the increased level of fraud.

Has anybody had internet accounts go offline? Even though we're in a cloud world right now, 80 percent of cloud companies are still one computer on a server somewhere just streaming things over the web from a single point of failure.

Cloud, right now, is very cool because we can have things available 24/7, but cloud has not really fixed the single point of failure.

Does anybody have an internet banking account that goes offline on Sunday mornings, so they can do a server update? I have a bank in Canada that goes offline on Sunday mornings. I've written them maybe 15 times.

I'm going to write a script to send them in real time because Netflix never goes offline to do their updates. Why? They're in real cloud technology.

Maybe the banks should look at Netflix.

The last point, which is the most important, transactions are becoming global on a daily basis.

If you look at the junket operations, which is a fascinating part of our industry, there's money moving between countries in real time all the time. The notion of trust is really where blockchain takes its root.

Now, I would like to get the devil out of the room right away.

Blockchain has nothing to do with cryptocurrency.

Cryptocurrency is one of the usages of what blockchain does.

What is cryptocurrency? Everybody knows it's a volatile coin that is traded for no real logical reason that seems to be doing nothing but going down lately.

That being said, cryptography has been around since a lot of wars ago. What is cryptography?

Cryptography is the digitalization of a transaction.

Cryptography is one of the basic stables of what blockchain is.

Tokens, all a token is is the product of the end of a blockchain. A blockchain is really, really simple.

You open up a file folder like in Dropbox, so you need a password to open it up. If not, you can't save anything.

Once you close the file folder in Dropbox, you need a brand-new password to be able to close it because when you open it up, the password is thrown away.

When you close it, you need a new password. That is where a token — we can use four or five different words there. I don't wanna get into the technical words in that part of the world.

Then, somebody came out with a new word that's called gas. They're just consultants that are making up terms each week.

All gas is is the same thing you'll find in the Bitcoin world but it's for the Ethereum world of which both of them are struggling.

If you really want to follow the blockchain space, the only decent advice I can give you is start reading the Microsoft website and start reading the IBM website cuz those companies are here to stay.

What is cryptocurrency? All it is is a product of a chain that when you open up and you close the chain, there's a cost of doing that. There's a cost of electricity. There's a cost of a computer. There's a cost of networking.

Cryptocurrency has estimated that there's a profit that can be made between the cost and the selling of that effort or that work, but cryptography is really very secondary for what we want to talk about today.

What we really want to talk about is why is blockchain important and why will it impact us over the next three to five years?

Number one is consensus. Right now, when a transaction goes to Visa to be verified, it's only the Visa server that says, "Yes, it's good. Here's your confirmation code."

In a blockchain world, there is no single confirmation. When it goes for confirmation, it's sent into a network of trust that can be three computers, five computers. It can be 5 million computers if you wanna be very inefficient but there's consensus that increases the level of security.

The second principle is distribution. If you look at Google, Google has been doing distribution for years.

How have they been doing distribution? Very simply.

They put data centers all over the place and they replicate the data so that you can't lose it if one place gets blown up. Inside of a blockchain, the principle of distribution does not have to be a public blockchain.

It can be private, but the notion is is you have to separate the confirmation codes so that it is done in a number of places.

My favorite in the blockchain world is transparency.

This is something that will be interesting for the gaming sector in highly regulated markets where a blockchain can be audited where the traceability is — the word that I'm still trying to get used to, it's immutable. In other words, it can't be changed.

There's a blockchain running in our industry somewhere in the world right now where after three months of data being streamed into the chain, itself, — which a chain is just a database, by the way, that's distributed over places.

The entity wanted to change some of the data. We had to explain to them that if you decided you wanted a blockchain, it's because you didn't want anybody to change the data.

The big advantage of a blockchain is that the technology is so complex to undo the series of random generated passwords that the data becomes very secure.

What is a blockchain? It's a database that you can distribute all or small parts of it over a network that should be private but, in some cases, can be public.

Then, when you want to put data in there, you have to undo a password and get consensus from the network that you're allowed to open up the folder.

Once you put the information in there, you have to do the thing in opposite.

You have to ask the entire chain, "Can I please close the folder, and can you please help me to generate a new password?" That's all blockchain is. Blockchain has been around forever. It's just now starting to get popular.

How can we use it in the game industry?

The four easiest applications are licensing. Anybody here ever done their Nevada, Pennsylvania, or Missouri license? It is fun.

I just had a colonoscopy lately because I'm now 50 years old. The only thing that reminds me of a colonoscopy is a license. It's really painful.

Licenses, can you imagine doing your license in Nevada, getting all that stuff on a private chain. Then, when you go to Missouri, all you have to do is give them permission to pick up information from Nevada and migrate it into their licensing process.

Can you imagine for your 70 — I had 80-something licenses. Can you imagine updating that in one place for the entire licensing world? It would be very efficient.

Number two is responsible gaming. In the responsible gaming world, the laws are starting to get more stringent.

Poland, right now, has the most advanced, responsible gaming laws in the world.

Japan is working on theirs.

Well, they are using a blockchain in Poland for one simple reason; to drive the responsible gaming laws to make sure everybody is traced in real time so that they can get rid of problem gambling.

Money laundering, as soon as you get money attached to a human being, you can trace who is using what and moving what where.

The final point, which is one that excites me and really doesn't excite the machine suppliers is machine compliance.

Can you imagine if you're on the floor somewhere in Missouri and you want to change out a part of a slot machine? All you gotta do is take the screen out on a blockchain and as soon as you plug the screen back in, the chain will come up into the slot machine, check and make sure that the screen is compliant, and do an automatic data check on the screen, and then allow the screen to be used with the slot machine. You're going to see the blockchain being used more and more in machine compliance.

I don't want to get in too much to smart contracts. I'm just going to demystify the word.

A smart contract is nothing more than an app that you can have on your phone that has data in it.

It can be hooked to your credit card or anything else.

When you have that app, you control the information that's in it. When you send out that information to a third party, it cannot be changed and that can be used in a digital form for you to do any type of transaction from buy a house, buy a car, buy a company, buy shares on an exchange, or do anything else.

A smart contract is a very small computer program that you're going to see in the form of an app on an iPhone and an Android where you can control your digital information that you use for any type of transaction. That's my introduction. Is that cool?

**Ms. Sue Schneider:** Great. Yeah. Thanks.

**Mr. Earle G. Hall:** Thank you.

**Ms. Sue Schneider:** As we go through, we're gonna have some discussion based on some comments that we've had in a planning phone call and we met this morning.

I think the thing that you'll find about this particular group is that they're very interactive with each other and will challenge each other so it should make for a good discussion.

Let me start out with something that I think is confusing for a lot of people.

That has to do with the fact that, apparently, this is a fairly transparent technology but yet, it's also touted for privacy and anonymity and that sort of thing.

I'm wondering if any of you would like to tackle that in terms of explaining a little bit more about how those things factor in.

**Mr. Matthew Cackowski:** [Unintelligible 00:15:18] here? Yeah. Alright.

Let's pretend that you actually checked your luggage. You didn't put it in the plane. You can carry it on and stuff it into the overhead.

They would give you a ticket, so you'd have a ticket with a number on it and your luggage is going bye. There it goes. Your luggage has the same number that you have in your

hand. Well, no one knows what's in your luggage. No one can see where it's going. You know where it's going and —

**Ms. Sue Schneider:** Hopefully.

**Mr. Matthew Cackowski:** Well, it could go to — maybe but at the other end, you used that ticket, you match up the number, and you get your contents back.

You could imagine that the blockchain works in a similar fashion that whatever it is that I wanna store, I would pack up, I would put in the chain, and I'd get my number.

**Mr. John J. English:** It, hopefully, gives your luggage.

**Mr. Matthew Cackowski:** Well, hopefully, get your luggage. Hopefully, you'll get your luggage back.

**Mr. Earle G. Hall:** Not gonna happen.

**Mr. Matthew Cackowski:** Apologies if anybody didn't get their luggage back.

**Mr. John J. English:** I look at, if you're following the news, which I know Earle doesn't watch all the news all the time, but the politics seem to be a big discussion, voting fraud and things along the lines of that nature, right now so the use case for blockchain spreads across everything.

It's just not for gambling and yes, it is coming to a racetrack near you, and to a sports book, and to many other parts of the casino because of the security, because of the different aspects of things.

I'm a huge fan of technology and seeing this technology move forward, I think is a big step forward for the next technologies that are coming our way, as well. I see a lot of technology being used currently like artificial intelligence.

We had conversations about that earlier. I see quantum computing on the horizon. That's something I think's gonna be really big.

Then, I think, eventually, we're gonna see blockchains inside of a quantum computer.

For those of you that are not following quantum computing, quantum computing is massive, light-speed technology.

You'll be able to process things faster than ever, even when we Google things. I hardly use my brain anymore. If one of my kids comes to me with a question, we Google it, for the most part. Then, you still have to search through all the Google stuff to get your answers.

Quantum computing gives you direct answers.

What I like about blockchain is it also gives you a direct answer. It can't be broken. Once it's there, it's there.

For some people, that's gonna be a good thing and for others — you know.

Gambling, for instance, is something that people like as private entertainment. We had a little debate about that this morning. Once a ledger is out there — I know that a ledger is something that's kind of going away.

When somebody says to a gambler, "Your name is gonna be on a distributed ledger across computers all over the world," it makes people a little nervous. It's something that they don't really want to have out there. Not everybody. Some people want the security and some people want to have the freedom of what they do on their own, so I do see that there's advantages.

I see that we might be a little early for the gaming industry, at the moment, which is good because being early to technology is not a bad thing, but for results, being able to quantify, and be able to get the consensus and the actual answers that you need, blockchain, it's here.

As Earle said, it's been around for a long time. It's just now become a major buzzword for everybody. It's mostly because of cryptocurrency. Cryptocurrency has really brought it into the mainstream. For those of you that have had your Bitcoin accounts looked at recently, it's not the most exciting aspect of what blockchain can be used for. I see politics, I see medical, I see transportation, I see all kinds of aspects for blockchain and gambling is certainly one of them.

**Mr. Earle G. Hall:** Maybe once again, if a blockchain is done right, it looks the same thing as a regular, boring database cuz all it is is data sitting in a folder, but the difference with blockchain is that the folder is synchronized over multiple places and you're not allowed to change the data unless every single one of those folders talks to each other and says hello.

I don't know if you've ever done a markup on a document in Word but it's complicated. You do the markup; then you send it off to someone and somebody can change it on the other end and you don't know it. You can undo it unless you do a password and all that stuff. It's really complicated. When you have Google Docs, you have 15 people working in a document. You can put it in suggest mode and they're not allowed to change it unless you give them permission. Blockchain works in the same way. All it is is everything that we're doing today, it adds on a layer of consensus.

Do I believe in public blockchains? The answer is no. Why? Because why would you ever, ever consider putting data on an anonymous computer somewhere in the world?

All the major banks here in the United States, right now, are working on blockchain technology in a very feverish pace to bring down their cost per transaction. They're all dealing with the switches of this world to buy, rent, or lease, or whatever pieces of their data warehouses so that they can create consensus over geography. That's all it is.

**Ms. Sue Schneider:** If you had to point to one or two advantages that you see to using blockchain, what would you point to? Wanna start, Earle?

**Mr. Earle G. Hall:** Number one, for me, is always cost. Right now, I go onto the floor at the Bellagio somewhere in Las Vegas and it costs me \$7.00 to take money out of an ATM. No, that doesn't work in 2018.

This is the reason why Interac has started to charge zero for their transactions because they are adopting a blockchain principle, so it doesn't cost anything to move money. They're trying to fight to keep Interac alive right now, so the first reason is cost.

Number two, if you think compliance for a second, when I think of a lot of jurisdictions that I know, you're licensing documents are actually sitting on one server in one office somewhere just like a file folder.

If there's a fire, if there's anything else, if there's a major power surge or something, you could lose thousands and thousands of compliance files. By having a distributed principle that is secure — in other words, if you tried to open it, you need multiple permissions to do it.

That's pretty exciting from a security point of view, so cost and security are the first ones I think about.

**Ms. Sue Schneider:** Okay.

**Mr. John J. English:** Compliance, as well. I think you're gonna hear a lot of review cuz we do agree on a lot of these subjects even though we do go back and forth on whether or not the use case, right now, is ready for gambling but compliance is one massive reason why, being able to put your secure information on the blockchain.

Some people will say, "Blockchain is nothing more than a glorified spreadsheet." Now, if I were to compare our sports wagering system to a system that's on the blockchain, you're probably more than likely not gonna be able to tell the difference at all, nor should you be able to tell. I mean the idea of blockchain is really simplicity and to keep it simple.

People go, "Well, how do I get everything into the blockchain? How do I make that happen?" You would behave just like you normally would.

The blockchain is nothing more than something that sits on the backside like a spreadsheet. For compliance, for doing things like Matthew does where auditing — deep, intensive audits — I'll let Matthew cover that side of it but everything from tracking a betting slip all the way to the transaction of the cash or the currency, itself, makes a big difference.

The other thing I see that's a big play is globalization, one standard currency instead of dealing with multiple currencies across many different countries, different costs, different

transactional costs, as you mentioned, as well. It simplifies that and pulls it all together into one type of transactional database to be able to use and be able to clarify simply.

**Ms. Sue Schneider:** Matthew.

**Mr. Matthew Cackowski:** Yeah, I can put some context around compliance. For W-2G processing, nobody should want to hold onto anyone's personal information. It's toxic.

If it's leaked, you have to patch it. You have to comply with all sorts of local regulations, federal regulations, and so on.

You could conceivably have a structure with blockchain where you didn't have to know the personal information of the person who won the jackpot, whatever it might be, and you could use that to manage how it is that you would deliver their reporting at the end of the year or during the year.

It would get you out of the business of managing personal information, which is nightmarish if you're in a position where somebody compromised it.

**Ms. Sue Schneider:** You wanna mention a little bit about the auditing that we talked about earlier too?

**Mr. Matthew Cackowski:** Yeah. From an auditing perspective, I guess you could — first of all, the blockchain lends itself directly to auditing in that each piece points back to the piece before it so that the last piece that you're looking at is the most current version of the chain.

In that sense, it's easy to travel backwards in the chain to come up with the piece of information that you're trying to locate.

It's an easy 1, 2, 3 moment for an auditor to line up and put that into a report and say, "Yeah, we traced this transaction and here's what we found," so that's easy enough.

Then, if you wanted to extend that same principle, you could look at time stamping, maybe the end of a race, and posting that. That would be a nice way to sort of add integrity to the racing pools and also have a permanent record. When you talk about permanence, this is somethin' that you would really want to be permanent is, yeah, the race went off at this time. We closed the pools at X and here's the transaction for that specific moment in time, which is a nice method to display to the public and to anybody in the business that we're doing business as we say we are. That's a nice audit moment.

**Ms. Sue Schneider:** Nice audit moment. I never thought I'd hear those words.

**[Laughter]**

**Mr. Matthew Cackowski:** I had to throw in the word moment. My hometown crowd is lookin' for me to use that repeatedly today.

**Mr. Earle G. Hall:** Okay, then.

**Ms. Sue Schneider:** Okay, we've talked about advantages. Tell me what you think are the biggest disadvantages, at this point in time, to blockchain, just generically, not necessarily for the gambling industry.

**Mr. Earle G. Hall:** John can go first.

**Mr. John J. English:** I'll go first. As mentioned, I think that there is some better use-case scenarios, first and foremost. I don't know if anybody here has heard the recent term called deepfakes. Has anybody heard of this so far, deepfakes? You will.

It's all over the news today. It'll be all over the news for the next few months I'm sure. They're talking Russia and other countries being able to create artificial intelligence that's so real — by the way, in China, they just had released their very first artificial intelligent news anchor. They can speak in any language. You can't tell whether he's real or whether he's fake by any means. It's truly a real scenario.

Deepfakes is something that you're gonna be hearing a lot about with the next upcoming election and things that are there. You're just not gonna be able to tell the difference between what's real and what's not real.

By having blockchain and by having all these various types of things, they can authenticate what's real and what's not real I think is something that's important, but I don't think that, at this moment right now, in the gambling world, we really have to worry about the deepfake stuff as much as you have to do in the real world and the real-world like politics and debates and things where things can be said by an artificial intelligent human being that you don't know whether or not it's real or if it's fake.

It could literally cause wars.

I'm a big fan of artificial intelligence for the gaming industry. In the gaming industry, we're all about knowing your customer. Now, if I've got an account-based customer, which horse racing and sports betting both have account wagering, for the most part, we get to learn a lot about our customers. With artificial intelligence, I know—Earle doesn't like the Packers but bets on the Raiders. I know he likes to bet on overs and unders. He likes to bet \$20 and he only likes to bet NFL. Now, as I get to learn more and more about what Earle does, I can cater more to his habits. I see that having a place in the real world right here, right now.

Deepfake is something that's really starting to move forward that we're gonna have to really address. I think the blockchain could be a solution to that. It's just not quite there yet.

**Ms. Sue Schneider:** Any other disadvantages people should be aware of?

**Mr. Earle G. Hall:** Three, for the moment.

The first one is the one that scares me the most and its ignorance.

Blockchain is not going away. It is the natural evolution from central servers to PCs, the client server, the cloud to back up distributed central, I'm going to call it. It's just a full loop from the 1970s and 1980s.

That being said, right now, is the problem that I deal with on a daily basis is the ignorance of what blockchain is because it's very simple. It's just added on a couple of new layers of security of authentication of distribution of what's already out there. It's no big revolution. It's just a normal evolution of technology.

Number two disadvantage of blockchain is blockchain produces a toxic waste that's called cryptocurrency. Everybody thinks that cryptocurrency is blockchain and that just completely bogs up the exciting security levels that blockchain brings.

The last one, we just entered very recently, over the summer, into what we call blockchain 3.

Blockchain 1 was deep and dark. That was cryptocurrency with Bitcoin.

Blockchain 2 was Bitcoin versus Ethereum. That was like *Dumb and Dumber* on their motorcycle or scooter, whatever they had.

Now, we've entered, finally, into blockchain 3 is where IBM and Microsoft has said, "Okay, kids, you're done. Get out of the way. It's time to take over."

Now, it's starting to be fun because the real players are taking age-old technology and adding on very simple, and very soft and subtle layers for us to start doing real blockchains.

Three disadvantages. Ignorance is the one that really makes me sad. Bitcoin is the one that freaks me out and the fact that there's still a lot of experimental projects that are out there like the latest ICO initial coin offering, it's kind of like, yeah, selling me swampland in Florida again.

**Ms. Sue Schneider:** Okay. Matthew.

**Mr. Matthew Cackowski:** Oh, I just wanted to say that I remember that was under disadvantages that blockchain and *Dumb and Dumber* go together.

**Mr. Earle G. Hall:** Yeah, pretty good.

**Mr. Matthew Cackowski:** That's the first time ever.

**Mr. John J. English:** One more thing, it can be confusing for a lot of people. I'm sure everybody is trying to figure out how to get on the blockchain, whereas if you're using an Oracle database or you purchased the software, your CTO knows how to use that software.

Right now, I think it's a big educational learning curve for a lot of CTOs — as to how to implement this into your business. It can be scary for a lot of people.

**Ms. Sue Schneider:** There are a number of suppliers that are out there that are dabbling with this right now and trying to figure out—

**Mr. Earle G. Hall:** Keyword is dabbling.

**Ms. Sue Schneider:** — yeah and trying to figure out how to evaluate that has gotta be pretty complicated for CTOs, at this point.

**Mr. Earle G. Hall:** John just hit a really good point. It is very easy for you if you're business owners.

Where is your biggest technology risk right now? Is it your KYC? If I was MGM and I had millions of accounts of rewards players or if I was Caesar Group or anybody like that, I would be as scared as Marriott is today.

You have to look where your biggest technology risk is. Then, because there's hundreds of salespeople trying to sell blockchain technology right now, I would call IBM. I'd call Microsoft. I'd call Intel. I would call Oracle and I'd have them all come in and do a presentation and use their salespeople to teach you.

Where your biggest security hole is right now is where blockchain will fill it in the next three years.

**Mr. Matthew Cackowski:** The big five audit firms, they're investing. If you have one of them as your auditor, you could definitely call on them to come in and do a presentation. I'm sure they'd gobble that up as being a positive moment.

**Ms. Sue Schneider:** Well, and somebody mentioned earlier that it probably will reduce your auditing cost in the future.

**Mr. John J. English:** You also mentioned that they're also driving watching considerably.

**Ms. Sue Schneider:** I know we've said it might be a little bit early for the gaming industry and particularly for racing but when we talked earlier, you talked about possibly using it for results for bet reconciliation for player-account management.

What do you think realistically might be the first things that folks in the room might be exposed to as real possibilities for using blockchain on a day-to-day basis?

**Mr. Earle G. Hall:** Data integrity. Tell me what aspect of your racing or your sports business has the result or has the calculation attacked the most?

By the players, by the jurisdiction, or by whatever?

All blockchain does — once again, I try to simplify this all the time because it's not as exciting as it looks.

Where is the data hole? Where is the calculation hole? Where is the algorithm having a potential for either being hacked, either having fraud inside, or good ol' human error?

Wherever I find data-integrity issues, that is where you can shore up the data by using the principles of opening up with a password with a consensus and closing up with a password with consensus.

Yes, it does bring your auditing costs way down. We're living it right now in the jurisdiction in New York.

**Mr. Matthew Cackowski:** I'm gonna add onto that with wagering integrity be it sports or horse racing. Whatever the pool of the transactions was going into the close of the event, you could hash that into a number and keep that as a record of the entirety of all of your transactions that you did going into that event.

That item, that one little, single number, you put that into the blockchain as the end of the game. This is what I had. Here's my hash number. That number could be used in the future to confirm that what you said you did going into the event and to the close of the event, it remains unchanged so that if someone went back and looked at all your transactions, all they would have to do is run the hash again versus a complete audit of every transaction and then that hash would be compared to what was in the blockchain.

You would've shown through hash of existing versus hash done at the time and those two items, if they match up, you have a clean — it would be a clean audit.

**Mr. John J. English:** I think maybe Earle should explain what a hash is.

**Mr. Matthew Cackowski:** Oh, yeah.

**Mr. Earle G. Hall:** Hi. My name is Earle. I'm Irish from the tropical island of Newfoundland, and hash is something we have on Sundays.

**[Laughter]**

**Ms. Sue Schneider:** Yum.

**Mr. Earle G. Hall:** Hash is a password. That's all it is.

Like I said, I don't get excited over the new terms that have come out. All a hash is it's the result. It's the password that's generated once all of the computers say, "Yep, you can lock it down."

When you lock it down, you create a series of numbers and letters that they're calling, for the moment, a hash. That's all it is but I still like the Sunday afternoon version.

**Ms. Sue Schneider:** Okay.

**Mr. John J. English:** Then going to the sports side of things or the racing sports side of things, we live in the era of hackers, right now. You mentioned Marriott, and SPG, Wells Fargo, one of the biggest banks in the world, Facebook.

Data is easily hackable these days. A lot of these companies, they're suffering from it. You'll see on television now a lot of these apologies where — I think Wells Fargo said, "Founded in 1816 and re-founded in 2018."

Data integrity, being able to secure your database on any level whether it's blockchain or any other type of security, is something that I think should be heavily investigated in your organization.

We are living in an era where we have too much information. If you know your customer, believe me, that's a lot of data that's personal data, particularly, if you're in the sports betting business or you have a W-2G that says your Social Security number. Everything is out there. I recently had a breach myself. It happened to me. I was pronounced dead, literally.

**Mr. Earle G. Hall:** Sorry, John. That's still too funny.

**Mr. John J. English:** It is. It wasn't. It was funnier than it was then.

**Mr. Earle G. Hall:** I'm sorry but John is dead serious about what he's saying.

**Mr. John J. English:** Yeah, it's a true story, though. Somebody got to my information and reported me as deceased.

Now, try explaining that to the state department. It wasn't easy. It took almost eight months for me to get my identity back so those types of security. When you got all this information on your customers, it opens up a whole Pandora's box if a hacker can get to it.

**Ms. Sue Schneider:** From this point on, if anybody has any questions, just raise your hand cuz we wanna make sure that we get to what you would like. Could you give it?

**Mr. Earle G. Hall:** We have a question right there.

**[Inaudible 00:39:33 - 00:39:38]**

**Ms. Sue Schneider:** Okay. I've been asked to repeat the questions for the recording. He's asking, "We've talked about the applications for businesses but what about applications for the individual," right? Anybody wanna tackle that?

**Mr. Earle G. Hall:** The application for an individual, I threw it up there just as a sidebar at the end for the fun of it. Right now, probably the problem that we all have right now is that our information is all over the web.

When you subscribe to a newsletter, when you download an app, everything you do, you're leaving a data trace somewhere on the internet. One of the things in the research group that I work with, we're starting to look at is there going to be what's called a personal smart contract?

On your telephone, you're going to have your own node of a chain. A node is a folder that you participate in. Will there be personal blockchain applications out there? You bet.

GDPR in Europe, the law that's come out to protect data privacy of an individual, it is the beginning of everybody having their own folder or node on a blockchain, whereas wherever your information is going to be on the web, it's gonna be controlled out of your phone.

Right now, that is becoming a reality in Europe. It's starting to become very painful where the dichotomy — is that a word? —

**Ms. Sue Schneider:** Mm-hmm.

**Mr. Earle G. Hall:** - between GDPR and KYC, they're fighting with each other. I know that's a lot of letters that I had to learn coming here, but GDPR is a law in Europe that says the individual owns their own data.

KYC says, "I need to know who that person is, so I can market and influence how they buy things."

How this is going to end up: If you have an iPhone cuz I don't know the Android world. I'm sorry. If you have an iPhone, you have a wallet on there. Just imagine a personal blockchain node.

In maybe or two or three years maximum from now, you're gonna have an app on your phone that's gonna contain every piece of transportable information and it's going to be secure so that when you sign up for something, you're actually going to give it to a trusted source and it's going to tell you if the other side is trusted or not on a chain.

If it's not, I wouldn't do it. I'm very scared of my data out there on the web. The answer's yes. We're almost there right now.

I wanna bet that the iPhone, in September, is going to have it embedded in it next year. We're right on the cusp right now.

**Mr. John J. English:** Can I add to that one thing? I'm gonna use the awful word cryptocurrency.

If you've ever purchased cryptocurrency or if you have a coin-base account, that's personal to you already. That is essentially using a blockchain for your own personal use.

**Ms. Sue Schneider:** Again, the European law that was passed that he referenced by acronym GDPR, if you remember when it first went into — if you get any newsletters from anybody in Europe or do any kind of business with companies in Europe —

**Mr. Earle G. Hall:** Cookies for everybody.

**Ms. Sue Schneider:** - you got a letter, a while back, when it first went into play asking you to verify that yes, you wanna continue to do that.

The U.S. does not have anything close to that, at this point so I don't know at what point — I've not really even seen any proposals about that sort of thing. Is there?

**Mr. Matthew Cackowski:** I think California, it might be the first state to go as stringent as the Europeans.

**Ms. Sue Schneider:** Okay. Any other questions, at this point, yet?

I have one related to compliance and government regulation. You talked about for licensing. You've talked for auditing, things like that. How do you see, if at all, the regulatory community looking at blockchain and are they becoming knowledgeable?

Do they see a future in that? They will ultimately be making the decisions whether that will be implemented or not.

**Mr. John J. English:** I think foreign jurisdictions are already head of [unintelligible 00:44:03] as you've mentioned. As Earle mentioned, Poland is one of the stricter regulatory bodies. They're very much looking into the completion of their regulatory structure to blockchain cuz it's immutable, to use that big word again. Things cannot be changed.

I think that Europe is probably gonna be the first adopter. I believe, if I'm not mistaken, it was Ohio, or somebody just recently had mentioned that they're — was it Wyoming? It's one of the states here that's taking the lead now and using it for regulatory aspects for their city councils, for other things, but not for gaming yet.

**Ms. Sue Schneider:** Okay.

**Mr. Earle G. Hall:** Probably the first thing I'd say there is when you think of a regulatory body — is there any regulators in the room?

When you think of regulatory body, they're there to uphold the law. The law is something that has to evolve slowly so you just don't make experimental mistakes, but that being said, when you look at the governance required of a government entity, blockchain is a natural fit when it comes to regulation. Why?

Because on a blockchain, the technology is doing the certification and it's doing the justification of the actual information, itself. It's self-contained data integrity, if I could say that.

I have a lot of jurisdictions that ask me because of the job that I have with GSA, "Earle, where do you start with blockchain?"

I always say the same thing. You start with a driver's license. Why a driver's license? Because if you go into a casino or racino or anything else and you give your driver's license to get a player's card or anything else, how do you know that's not fake?

You have absolutely no idea. A driver's license being a primary trigger of so many different things that it's probably the best place for any jurisdiction to start. Regulators, right now, around the world are scratching their heads because they know the amount of weight that they have on their shoulders with respect to compliance.

Blockchain is the answer because of the way the data is secured. It's not just a password. It's a chain that protects the password. To be able to open up the folder, that chain has to be broken and everybody has to vote to break the chain to put something in there.

We just held a conference for GSA in Reno, Nevada not too long ago. We had an overwhelming amount of regulators there. Every one of 'em, almost, was saying the same thing, "Where do we start and how do we get involved because we know this is going to take a lot of the potential for fraud out of the machine?"

All we have to do right now and it's what I say to the GSA members all the time, 2018, 2019 is an education phase. Do not pull the trigger until you have a confirmed target. Take your time; get educated. Read about it; read about everybody else's mistake.

We had, at the GSA conference, one of the head guys from Intel with us who told us one of the major mistakes that they made with blockchain and that they had a very bad mistake inside of their hardware that they were building.

If I could encourage you to get educated and whatever you can find on blockchain, just consume it as it evolves. This summer, we went into blockchain 3.0 where Microsoft is rolling out COCO. IBM is rolling out its products. We're getting there. I'd say within 18 months from now, you're going to see blockchain in a lot of different jurisdictions doing very small pieces.

The piece that I'd love to see the most is equating a driver's license to a license application. Just right there, you're taking 80 percent of the problems out.

**Ms. Sue Schneider:** Before I move to Matthew on that question, can you talk a little bit about what Gaming Standards Association is and the effort that's going on related to blockchain, for those who might not be familiar with it?

**Mr. Earle G. Hall:** Every country has their own standards association. The United States has the American Gaming Association. All of those organizations rolled back, in a certain sense, to an international gaming standard association that develops standards for the world like G2S or anything else in an effort to try to educate and standardize the way things are being done.

What GSA does on a global level, especially I'd say the most success that GSA has had over the last two years is in Malta.

The GSA is directly responsible for guiding Malta in very many ways in their decisions that they've taken with respect to blockchain.

The first thing that we'll say to any regulator that'll come and see us or any CEO of a racino that'll call me cuz I love talking about this stuff in private is tell me where your data hole is, tell me where your problem is, and let's see the way that we can secure it the most affordable and the most easy without getting caught up into all of the experimentation that's going on out there.

Really, blockchain 1 and blockchain 2 scare me to death because people are throwing their money around with Ethereum and everything else.

What GSA is up to right now is heavy, heavy education while the GSA gets ready to roll out technology, if you can believe it, because you cannot do blockchain on paper.

It doesn't exist. To do blockchain, you have to have real technology and show something and experiment. GSA is really gearing up to try to guide all of the different countries and jurisdictions to go slowly, surely, and securely towards blockchain.

**Ms. Sue Schneider:** What is their website, in case anybody wants to plug into that?

**Mr. Earle G. Hall:** I don't know.

**Ms. Sue Schneider:** Oh, you don't know.

**Mr. Earle G. Hall:** Don't ask me what my telephone number is.

**Ms. Sue Schneider:** Maybe *gsa.org*.

**Mr. John J. English:** Yeah, it is too. I was also at the conference and it was mostly regulators that were there. I would say regulators from all over the world.

**Mr. Earle G. Hall:** There really was.

**Ms. Sue Schneider:** That's good.

**Mr. John J. English:** In a more word, I would say to the regulators, it's very similar to what we were saying about the sports-betting system. You have one sports betting system [distorted audio 00:50:45] traditional database.

If you have blockchain system over here, you shouldn't recognize a difference between the two.

I think from a regulatory aspect, it should be the same way. The only thing is it's gonna cut down on redundancy.

Licensing can be a very lengthy and scary process and it can cut down on the redundancy. It could cut down on the time, and it could also cut down on the cost.

**Ms. Sue Schneider:** Okay. Matthew, you wanna add anything in terms of the regulatory side?

**Mr. Matthew Cackowski:** Yeah. Just add on to Earle and to John the use of an electronic method for identification and verification. If you could imagine, in your own locations, signing up a new player and what the cost is to slow down the process with a swipe, or a verification, or some kind of paper, and then also the residue from the sign-up, which is how I know something about you.

I have your personal information. If you change that to a security-token kind of moment where I'm allowing you access to my credentials, the sign-up process goes from what is a task to it's a button click and there's no residue of the PII, the person's personal information. That makes a lot of sense.

**Ms. Sue Schneider:** Any other questions yet?

One that I wanna bring up relates to payment systems and how that fits in because that's clearly the lifeblood of the gaming industry.

How do you all see that fitting in, whether it's the traditional payment systems or if there are other things coming down the road and both for land-based and any sort of mobile or internet?

**Mr. Earle G. Hall:** Let's go global for a second. SWIFT, which is probably a well-known company that moves money all throughout the planet, the cost per transaction for a SWIFT transaction is absolutely ridiculous.

They have moved a lot of their transactions already to cryptographic blockchain. I didn't say cryptography. I said cryptographic and not cryptocurrency. Why? Because the cost of a transaction is micro-cents instead of many, many dollars.

Payment systems, right now, are in a race to the blockchain for the very simple reason is the traceability, the speed, and the security are absolutely infinite when compared to the legacy systems or the traditional systems that are being used today; where you have a private network called Interac that goes to another private network that goes to another private network.

Everybody is taking a piece of the pie like PayPal does and all those people. When you're in a blockchain world, when you're in a cryptographic transaction world,— in other words, the password or hash that was referred to — when that is the thing that is transported, there's no cost to transport it.

How much does it cost to send an email? Nano cents maybe but that's what it costs to do a cryptographic, blockchain transaction. Payment systems are all — that is an absolute.

They're all moving to the blockchain for speed, for security, and for efficiency. When anybody asks me, "Earle, where are going to see blockchain first in the gaming industry?" Payment systems.

**Mr. John J. English:** I could tell you that another big issue is chargebacks. Most of the major credit card companies have been averse to online gaming or to gambling as a whole.

Cash is still king in the gaming industry or prepaid cards because people don't want to have to deal with chargebacks.

When you can authenticate that that person actually made that bet and follow that all the way through, there's no dispute.

**Ms. Sue Schneider:** Well, and along that same line, I mean most online payments have a variety of verifications, whether it's geolocation, age verification, anti-money-laundering, know your customer, whatever.

Basically, will that all be migrating onto that, you think?

**Mr. John J. English:** I hope the know-your-customer does, for sure.

**Ms. Sue Schneider:** Anything related to payments?

**Mr. Matthew Cackowski:** Not for specifically to payments but to a customer interaction. The ability to get access to your funds at the track, at the sports book, it makes it pleasant for the customer.

If this could add to that and also not open up some sort of gambling addiction question, then it would be worth it to try to invest in and make it like the experience nicer for the customer.

**Mr. John J. English:** Going to the regulatory side of that too, again, for problem gaming, for blacklisting, and for people for self-exclusion lists, as Earle mentioned, once you're on the list, you cannot change it so it's permanent.

I think that that's a big benefit for problem gambling, as well.

**Ms. Sue Schneider:** We talked about it probably not being time yet but what kind of timelines do you all see for these sorts of things to begin to be implemented in the industry? What would come first? How far along down the road?

What's the sequence of where this may begin to become more real?

**Mr. John J. English:** I could tell you I'm startin' to see some of it now in Europe; a lot of it coming from Europe. Timing for this is something that I think, as Earle mentioned, you're gonna have to find out where your holes are, where your problems lie, and where blockchain can help you.

I mean as of right now, I mean in the sports business and much like the horse business, we've figured out, pretty much, how to handle fraud.

When you get your betting slip when you write your ticket, that's your smart contract. Don't lose it just like don't lose your password, so we kind of that functionality is already in place.

With the blockchain now, we're starting to see companies saying, "Look, we can protect your data better. We can make your security much more intense than where it's at. We can help you with your KYC.

We can make sure that your validation is there. We can cut down your costs on transactions. We can cut down on chargebacks or we can kill chargebacks entirely."

I'm startin' to see a lot of different companies. In fact, we're working with one now that operates both on the blockchain and off the blockchain so we're starting to see some of it happen now.

The technology that's really applicable to gaming, at this stage right now, that I see is really big is artificial intelligence. We talked about that earlier. There's a lot of roles that artificial intelligence can play in helping us.

I mean virtual racing and virtual sports betting and all of that is there now using AI engines as well as historicals and other things. I think that we're starting to see it happen now, but I wouldn't look towards the blockchain as being something that's super common for the next couple of years.

**Mr. Earle G. Hall** I'm gonna give you three.

Number one is payments. That's for sure. I'm seeing payment systems pop up everywhere that are running on a chain right now to get the cost of transaction down under a cent.

Number two, anybody here ever electronically sign a document either by copy/pasting their signature into a document or by strictly using the sign feature in Adobe or even cooler than that, actually doing electronic signature in Adobe?

**Mr. John J. English:** Yeah, of course.

**Mr. Earle G. Hall:** Here's my question. Remember, in the good old days, when we'd sign 10 checks before we go on the road just in case somebody needed something?

We used to put those checks in the safe or we'd hide them in the back of the filing cabinet or somewhere, put 'em in a sock. I don't care what you did.

Have you noticed how you're throwing your signature around the internet right now on an electronic document? I can forge one of your documents in a half second just by doing a screenshot, putting 'em on any document, and sending it away.

Signatures is becoming a rolling target over the last six months that I think you're going to see signatures being chained very quickly within the next year.

Before Marriott and after Marriott — I don't know if you've heard it here first but in the world of blockchain, there's a before Marriott and there's an after Marriott.

The gentleman that was there that asked the question about personal blockchains, well, I don't know because in my Marriott account, I have two credit cards. I have so much personal data and personal preferences like no feather pillows and all that junk.

All of that stuff was thrown out on the web and I don't know who knows now that I don't like feathered pillows. It really stresses me out.

**[Laughter]**

**Ms. Sue Schneider:** It could be worse, Earle.

**Mr. Earle G. Hall:** I'm serious. In the blockchain world, before Marriott, I would've said, "Hmm, maybe we have three years ahead of us," but when Marriott gets slapped with a \$4 to \$5 billion fine because of all the data that has been thrown out on the web, I think we're going to see Marriott's app turn into the first personal blockchain wallet on the planet very rapidly.

I'd say even as fast as next summer.

**Mr. John J. English:** Also, if you have an airline account, they got all your information: your passports, your travel destinations, where you're going, everything.

**Mr. Earle G. Hall:** Your seat preference.

**Mr. John J. English:** Seat preference, everything.

**Ms. Sue Schneider:** Did you wanna add anything else?

**Mr. Matthew Cackowski:** No, I'm goin' after Earle with a feathered pillow.

**[Laughter]**

**Mr. Earle G. Hall:** Hey, I started off with *Dumb and Dumber*. It's only gonna get better.

**Mr. Matthew Cackowski:** I can go right after you.

**Ms. Sue Schneider:** What kind of advice would you give folks here on — I mean you talked about in terms of maybe getting with your auditing firm and asking them for some advice, and guidance, and education on it.

You talked about getting with Microsoft, or Cisco, or whatever kind of vendors that they're using. Can you be really explicit on how — what's the best way to educate themselves and what is it that they really need to learn and get their arms around in preparation for these options coming down the road?

**Mr. Matthew Cackowski:** For me, I wouldn't try to swallow the whole universe of blockchain. I think I would look at my business first and ask one question around would I want that specific piece of information to be easy to get to forever?

If you can find one of those that's not easy to get to but you want it to be the same forever and ever, that's a moment where you could put a study plan together or an investigation, research, business-analyst moment, whatever you wanna phrase that and you could come to understand how it would work for you.

**Mr. John J. English:** I would suggest going the way Earle did and consult with some of the bigger companies, initially, follow what they're doing.

These companies like IBM, HCL, Oracle, these are companies that are already really leading the pack and doing these things and would be happy to help customers get on board.

Look, you can't take back the past.

Like Earle mentioned, there's signatures out there. Let's not be crazy here and think that blockchain is gonna create world peace overnight.

That's not gonna happen. It's not gonna cure cancer tomorrow.

**Ms. Sue Schneider:** "Kum ba yah."

**Mr. John J. English:** Yeah, these are things that we have to find out where the issues are in your business.

You also have to find out if you really need it.

Is this something that you really need to do?

A lot of people get clouded around this because blockchain is the word for everybody.

Do you really need it?

That's something I argued with Earle and with others.

At this point, we don't really need it. We don't notice the difference between — we figured out when somebody copies a betting slip, how to know when there's fraud.

We know how to follow certain aspects of gambling. Do we really need it in the industry is the question?

For a lot of different things, the answer is yes and for a lot of it is no.

Lower your payment processing, absolutely.

Chargebacks, certainly.

Protecting your data, certainly.

Those are all things that could be benefits, but if you feel like you're strong enough and doing that already, you might not need it right now.

**Ms. Sue Schneider:** Okay. Earle.

**Mr. Earle G. Hall:** I'm gonna give you my personal cheat sheet that I use.

Every time I have to sit in my professional life with somebody, I always start off at the same point. I ask 'em to draw a line on their piece of paper like I just did.

On the left, you put EX for X, if you've got a couple X's like me.

You put on the right, you put IN so external environment, internal environment.

On the left side of the page, you're going to figure out what data, what information do you have belong to somebody else?

Do you have a driver's license belong to a player?

Do you have an address belong to somebody?

What do you have inside of your organization that belongs to somebody else that you can get sued for?

That's point number one because if you're holding data in 2019 that is not yours, you're liable for that data.

Internally, you've gotta define what the risk is of losing your database, losing your accounting system, losing whatever.

That's secondary for me but it's always what is the risk that I'm holding to get hit from the outside? Do you —

**Ms. Sue Schneider:** Or from the inside.

**Mr. Earle G. Hall:** Yeah.

**Ms. Sue Schneider:** It could be a hacker, or it could be an employee.

**Mr. Earle G. Hall:** They usually are.

How's that one?

Number two, outside of evaluating what data you have from the external environment and your risk, in 2019, we're going to live a sad moment.

We're going to start seeing CTOs going to jail. They're going to be going to jail for ignorance. They're going to be going to jail for fraud. They're going to be going to jail for negligence just because of the fact that what's happening at Marriott right now is stirring up the pot at a level it's never been stirred.

Nobody can predict the outcome right now. That's where the Microsofts, and the IBMs, and the Oracles are going to scare everybody by saying, "If you're not blockchain..." The only reason they're doing that is to sell blockchain.

There's a risk you have to manage. Before you even look internally, I would say what am I managing belong to somebody else that if I get hacked and all that data is throwing out on an FTP website somewhere, how am I going to be impacted financially, and credibility, and integrity-wise.

The last point, I'm gonna go back to the same thing I do with my own team that I have.

You go on YouTube and you type the word blockchain and you make sure that every video that you look at is less than three or four minutes because if it's more than three or four minutes you'll lose interest and usually it gets too detailed and it's boring.

By the time you're up to 100 videos, you know as much or more than all the salespeople from Microsoft and IBM that come to see you.

**Mr. John J. English:** I'm on "Blockchain for Dummies."

**Mr. Earle G. Hall:** Did you read it?

**Mr. John J. English:** I did.

**Ms. Sue Schneider:** Is there one?

**Mr. Matthew Cackowski:** You know what? I have a decent book. It's a one-hour read. You could read it on the way home. I'll find that.

**Ms. Sue Schneider:** Any other questions?

**Mr. John J. English:** That's good.

**Ms. Sue Schneider:** Okay. Alright. Well, if you would join me in thanking our panel, then.

Thank you.

