

Jerry Cuomo says blockchain is OPEN for business

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Jerry Cuomo: All right. Are there any folks from the chain gang out there in the audience? All right. Chain gang is in the house. So, I'm Jerry Cuomo, and I want to talk to you about a very exciting project that is open for business here in 2016, and that's blockchain. And folks, I think you've probably heard blockchain almost every day that goes by. Blockchain is big, it's really buzzing right now, and we believe that blockchain will fundamentally change the way we do business. And it's interesting, it's fueled by both possibility, innovation and almost threat.

And those two things converging are really motivating various industries to really take this technology seriously. In fact, it seems like every CEO from every client wants to know about blockchain. And that IBM is underway and doing what we typically do around the new technology is open by design. So, we're starting with an open approach and I want to tell you a little bit about that today.

But before we start, maybe a little Blockchain 101. So, how could blockchain impact your everyday life? How many of you out there and actually sold a stock recently or perhaps purchased a car? Or even parked a self-parking vehicle? Now, I'm sure all of these things, you may have noticed that they take some time and that there's some time for these to settle, maybe a couple days before you actually see the amount, you know, in your checking account show up after you sold a stock. And was your title to your car emailed to you before you left the dealership? No, it took a couple days to settle that transaction.

And who is liable if that self-parking car crashes while it's self parking? Right? I'll talk about that in a second. These are all opportunities that blockchain could come in and actually positively make a delightful experience for folks' everyday life. So, enter blockchain. I think many of you know that blockchain was made famous and is being made famous by its use within Bitcoin. But blockchain is not Bitcoin; in fact, its use could go far, far beyond what we see in Bitcoin today. In fact, we believe that blockchain can enable many of the world's existing business process to be reimaged, things like supply chain, security settlement. But as interesting, if not more interesting, that blockchain could enable new styles of business processes that haven't even been yet to imagine. Right? Digital oriented processes.

So, when you look, and the way the industry is thinking about blockchain is that there's a very broad, very broad range of business processes and applications that can be implemented through blockchain. So, let me tell you a little bit more. Let me start by what the game changer is. The game changer for blockchain is fundamentally adjusting time. Reducing time to settle a multiparty transaction. Right? That's number one. Number two is cost. Removing cost from overhead due to intermediaries. It's

another big, big advantage. And the third one, certainly last but not least, is reducing risk due to tampering and collusion. Right? So, as you hear examples, always run these three things through. And when you see them, the power of blockchain is typically at work. So, how does it work and, you know, let me tell you a little bit about what are the key elements of a blockchain are.

So, blockchain starts with assets, things of value. Things like cars, deeds, stocks. Right? And these things are recorded in a ledger that is shared across participants in a business network. All right. So, think about a business network. A car dealership. Right? Manufacturer, dealership, leasing company, Department of Motor Vehicles, scrapping yard. These all make up a business network around automotive asset ownership. Right? Now, the ledger works across this business network in what I would say a magical way. It has three magical properties; one is it's replicated. So, as you enter into your ledger a transaction, an entry, it's magically, instantaneously replicated to all other ledgers in the network. All right. That's the first part. And there's checks and balances that go ahead.

So, the members of the network actually perform consensus to kind of reach a vote of truth that that item is indelibly going to be placed on there. So, think about it. John Wolpert likes to say it's like writing on the ledger with a Sharpie®, an indelible marker. And once it's there, it's immutable, it can't be changed. It's for everyone to see forever. The second is it's shared. Right?

So, your ledger is permissioned such that you can see the things that you're allowed to see. An encryption is used as a way to prevent you from not being able to tamper with the things that you're not allowed to tamper with. And last but not least, the magical ledger is transactional. Right? So, you can actually move assets from one member of the network to another. Again, in a non...in a deterministic way that is immutable. Once it's done, everyone sees it and it's there. Right? You can actually execute business logic against that.

So, in leasing company case, you can say after maybe three years, the ownership goes back to the dealership or actually gets sold to an end user. Right? So, these are the properties that make up a blockchain. And I'm thrilled to share with everyone that we teamed up, a group of like-minded folks in the industry teamed up and announced with the Linux Foundation a Hyperledger Project. And the Hyperledger Project is really focused on making blockchain real for business applications. Right?

So, a number of us in the industry have been studying blockchain and we've kicked the tires of many of the open source fabrics out there, some really nice work, and we all decided that there are things that can be done to these fabrics to make them more consumable across a broad range of business applications. Things like permissions. Right? Respecting privacy and confidentiality, enabling these ledgers to be audited. Right? Really, these resonated with these like-minded folks, and together with the Linux Foundation, we announced a Hyperledger Project. IBM donated about 45,000 lines of code that we built from the ground up over the past eight months, taking some of our best researchers and developers, building out a blockchain that is built express for business applications and we've offered

that to this Linux Foundation. Basically, the group in the community, in the Linux community, agreed on a scope, right, for this project and this is basically the scope that we agreed on. Basically blockchain having membership, being able to deal with transactions, being able to deal with business logic in the form of smart contracts.

So, IBM's strategy is pretty simple. It's around three C's -- Code. Right? Generated...all right, four C's. Code Community, Cloud and Clients. All right.

So, we're all in on the Hyperledger Foundation, again, about building a blockchain from the ground up for business. It's about then running that blockchain in a cloud -- so, we're running it using all the technologies that you saw. We have a Cloud Foundry based service in Bluemix right now that allows a developer to do...to build blockchain applications and kick the tires for some of the samples that we have. And last but not least, it's about engaging clients.

So, those are the three C's. To better engage clients, we've extended our Bluemix Garages to actually support a blockchain curriculum and we've announced four locations, New York, London, Singapore and Tokyo as places where we have it, have the blockchain annex to the Bluemix Garage. All right. So, kind of having this point, I would love you all to go out to Bluemix and try out our blockchain service out there. So, the thought is taking the Hyperledger Project and building a set of plug-in services around it. It first one is around DevOps. There will be many more to come.

Let me just quickly run through what the service does. All right. So this is the DevOps service. I also invite you to go to ibm.com/blockchain where you can get started right away by clicking that get started button. You have a number of samples that you can get right into. Click on a sample and there's lower left-hand corner is the marbles sample. Running Marbles in Bluemix is a snap. Kind of sign up for Bluemix, click on Marbles. There's a marble application that uses the blockchain service. Let's run Marbles. It's a simple blockchain environment where the blockchain network is made up of Bob and Leroy, and Bob and Leroy, well, they exchange marbles. They trade marbles and they can create marbles of different sizes. This shows blockchain network at work. It shows the creation of assets like in this case the asset is a marble that has different size and color. Okay, now, Bob has a yellow marble and Bob can run a transaction. Right? He can...you see on the bottom the blockchain is on number 22. Now, Bob is going to shift the marble over to Leroy. That's transaction number 23. And it's been immutably placed on the blockchain. It now belongs to Leroy.

So, ibm.com/blockchain. Check out hyperledger.org and blockchain is open for business in 2016. Thank you very much. Here you go, Angel.

[APPLAUSE]

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