Proposal – IBM blockchain to manage marijuana supply chain in British Columbia

By Jerry Bowles November 20, 2017

SUMMARY:

IBM sure knows how to make the blockchain look interesting. How about managing the soon-to-be-legalized marijuana market in British Columbia?

Probably not a headline you ever thought you'd read on diginomica, but the times they are a changin'. The idea is probably not as big a pot-pipe dream as it sounds.

Canada is in the process of legalizing marijuana by July 2018, fulfilling one of the key campaign promises of Prime Minister Justin Trudeau. Ottawa is leaving it up to provincial governments to regulate its legal sale and distribution.

When the government of British Columbia asked for feedback on the best way to manage its legal marijuana market, IBM quickly proffered a regulatory filing, arguing that the province should use the distributed ledger technology called blockchain to manage its legal marijuana market.

In the filing, the Armonk, NY-based software giant said:

> *IBM suggests Blockchain is an ideal mechanism in which BC can transparently capture the history of cannabis through the entire supply chain, ultimately ensuring consumer safety while exerting regulatory control – from seed to sale.*
>
> *Blockchain is rapidly becoming a world leading technology enabling the assured exchange of value in both digital and tangible assets, while protecting privacy and eliminating fraud. Blockchain offers a shared ledger that is updated and validated in real time with each network participant. It enables equal visibility of activities and reveals where an asset is at any point in time, who owns it and what condition it's in.*

As every schoolboy now knows, blockchains were originally conceived as a public, shared ledger that keeps track of payments in the Bitcoin network.

Bitcoin's volatility has scared off a lot of potential mainstream adoption of blockchain as a payment network.

But companies quickly realized that the core concept of the blockchain could be repurposed for many other chains of custody applications, ranging from diamonds and tomatoes to global supply chains. Or, as in this case, the growth, distribution, sale, regulation, and taxing of your next favorite pastime substance.

Basically, a blockchain is nothing more than a distributed database that's maintained by a peer-to-peer network of companies involved in almost any shared marketplace. Every company manages and maintains its own copy of the shared ledger.

In the case of British Columbia's pot initiative, "each party in the business network" (growers, processors, distributors, retail locations, and regulators) would get its own ledger copy showing all transactions. The shared ledger would be accessible for anyone with the right credentials to see, allowing regulators to conduct spot audits of every marijuana transaction in the province.

Retailers could identify which farm a particular batch of marijuana came from and what safety inspections were conducted along the way. Reads the IBM pitch:

> *The Blockchain shared ledger is updated and validated in real time with each network participant. This enables equal visibility of activities and reveals where an asset/product is at*

any point in time, who owns it and what condition or state it is in. This type of transparency would bring a new level of visibility and control to the provincial regulators and provide assurance to the multitude of cautious stakeholders regarding the way the management of a cannabis supply chain is rolled out within British Columbia.

IBM's brief proposal to the government of British Columbia identifies key benefits for each of the parties in a possible blockchain agreement:

BC Government: Blockchain can help the Provincial Government take control of sourcing, selling and pricing of products, therefore can reduce or eliminate black market sales completely.

Producers: Blockchain can assist producers with real-time inventory management, greater projections of supply and demand, and also elicit trends of consumption through data analytics.

Retailers: Although the Government of BC hasn't confirmed what end-user distribution model will be used, we anticipate that it is likely that government itself will play a role in that process. An interconnected Blockchain network can assist retailers identify supply/demand gaps ways to mitigate those gaps, providing feedback mechanisms to producers, and use data to create predictive insights.

IBM has been promoting blockchain aggressively in recent months. In March, the company released IBM Blockchain, which it says is the first enterprise-ready blockchain service based on the Linux Foundation's open source Hyperledger project.

IBM's blockchain services are designed to help developers create, deploy and manage blockchain networks on the IBM Cloud and a number of clients have already done so, ranging from the startup Everledger, which bills itself as the digital vault of the future, to financial services leaders like Bank of Tokyo-Mitsubishi UFJ, Postal Savings Bank of China and Northern Trust.

My take

A blockchain approach to supply chain management has a number of useful business advantages. Transactions can be asynchronous—individual buyers and sellers can deal

directly with each other.

The Hyperledger stack has cryptographic features that can limit one vendor from spying on another vendor's transactions. Hyperledger can also be combined with Internet-of-things technology, attaching a tracking device to products in transit and automatically generating data about their progress as they move through the supply chain.

Using its Watson IoT Platform, IBM makes it possible to use information from devices such as RFID-based locations, barcode-scan events, or device-reported data with IBM's Blockchain. Devices will be able to communicate to blockchain-based ledgers to update or validate smart contracts.

Built to scale to thousands of users quickly, IBM says its cloud will allow production blockchain networks to be deployed in minutes, running signed, certified and tested Docker images with dashboards and analytics as well as support.

A blockchain is only as good as the security of its infrastructure and IBM has spent millions of dollars on teams of security experts, cryptographers, hardware experts, and researchers to make certain its blockchain and cloud services are tamper-resistant and free of back door vulnerabilities that allow unauthorized access.

With so much buzz about blockchain and so many projects underway at the moment, we're about to find out whether the technology is the real thing or, in the case of BC, one toke over the line. I'm becoming a believer.

This just leaves me with two BIG questions – what would Bob Marley have said? Who gets to test the supply chain in the real world? Somehow I can't see the Big Blue consultants out in the field, so to speak. 🙂

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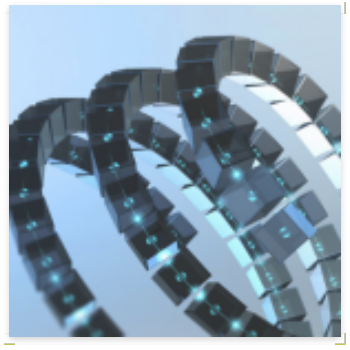

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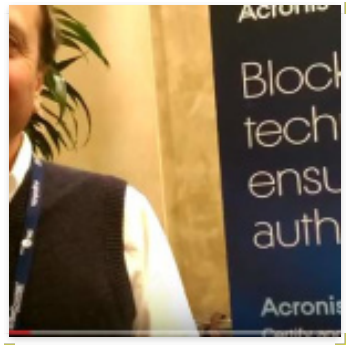

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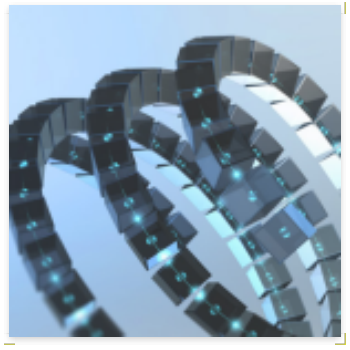

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