

Ignite success on any cloud



The first multicloud deployment of the IBM Blockchain Platform is poised to reshape the oil and gas supply chain — while lighting a path for other industries to follow.



You wake one winter's morning to a frigid bedroom, courtesy of a surprise polar vortex dumping two feet of snow on your home. Stumbling to the kitchen, the blue flame to heat your morning coffee doesn't appear from the burner. Trying the faucet, the hot water runs ice cold.

You have a sinking feeling as you trudge outside to check your 1,000-pound propane tank. Its rusty gauge — one you're never sure is accurate — most definitely says "empty."

A frantic call to your retail propane supplier follows. The scene replays itself with other homeowners across the frozen region, as a mad scramble for available propane ensues. Trucks and train cars filled with supplies are stranded. The spot price for available propane spikes. Everyone — from you huddled under blankets to players up and down the oil and gas supply chain — is caught by surprise, and quite literally, left out in the cold.

Enter Vertrax, a leader in supply chain management solutions for the oil and gas bulk liquid distribution industry, and its

emerging technologies provider, Chateaux Software. The two Connecticut companies have just launched the Vertrax Blockchain to help prevent supply chain disruptions like the one just described. And they're doing it with the very first multicloud blockchain solution built on the IBM Blockchain Platform and deployed on AWS.

This multicloud capability is a watershed event in distributed ledger technology. Vertrax came to Chateaux Software — an IBM Business Partner — after building a series of solutions on AWS that provide deeper insights into the oil and gas bulk liquid distribution supply chain. Their innovative solutions like IoT sonar sensors placed on fuel tanks give retailers real-time, pinpoint accuracy of client propane usage — and inject unprecedented transparency and visibility into a supply chain that sorely needs it.

Yet gathering and disseminating those insights wasn't enough for Vertrax to fully meet the needs of their retail supply customers. The oil and gas bulk liquid distribution business runs on razor-thin margins, and purchasing decisions for this



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- **Vinny Mullineaux**,
CEO, Vertrax

year’s demand are often based on last year’s consumption and long-range weather forecasts. In response, Vertrax sought a trusted, secure, flexible and easy-to-use way to share real-time data among supply chain participants — who are often fierce competitors, each with their own computing environments — so they could all make critical supply chain decisions as quickly as the weather changes.

As you’ll see in this in-depth conversation with Vinny Mullineaux, CEO of Vertrax, Ken Zimmerman, CEO of Chateaux Software, and Vijay Rathna, Chateaux’s Director of Enterprise Applications, the blockchain solution they’ve created ushers in a new era of flexibility, collaboration and speed-to-market not just for the oil and gas industry — but for today’s multicloud world.



Left to right: Ken Zimmerman, CEO of Chateaux Software; Vinny Mullineaux, CEO of Vertrax; Vijay Rathna, Chateaux’s Director of Enterprise Applications

Vinny Mullineaux: The problem that we’re trying to solve now with the Vertrax Blockchain is one that’s been there for decades. There’s lack of visibility in this supply chain. The bulk liquid transportation supply chain is a very complicated supply chain with tens of thousands of potential participants. Refining, storage, transportation — it’s very complex.

In talking to our customers and our prospects, the notion of them being able to manage through disruption in that supply chain is probably the biggest thing of value. They can muddle by with lack of visibility in a normal situation. But when disruption happens, that lack of visibility means they just lose a lot of money.

It’s always in the deepest winter. You get this polar vortex coming down from the Arctic. Suddenly, demand is spiking like crazy. Delivery trucks break down. Trains get derailed through snow issues. These disruptions are massive, and our customers have no recourse. You potentially have to buy product from other sources who will gouge you. Do you want to ration your propane to your customers because there’s been a disruption that you never knew about? But if you’re given five days heads up that there’s a disruption coming, you may be able to do something about it.





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- **Vijay Rathna,**
Director of Enterprise Applications,
Chateaux Software

Vijay Rathna: Before we even started the MVP, we went through the ideation and design-thinking process where Vertrax was educating us on the problems they are solving with disruption – trying to do predictive monitoring, bringing data from multiple parties together in a single dashboard view. And then we educated the Vertrax team on how blockchain can solve problems in each of these individual areas.

Vinny Mullineaux: Once you get what we do and the real business problem we’re trying to solve, I think it’s only then you can actually come up with a real plan to build a piece of software. It’s useless without that.

Vijay Rathna: With the Vertrax Blockchain, we are getting weather data, logistics data, transportation data and more to give insight to retailers, to suppliers – to everyone. There are so many touch points where we are trying to predict the impact of a disruption. Everyone needs to provide data, and you need this data in real time to make an impact. You can’t have the data come in two days after a polar vortex.

So one of the key requirements for Vertrax was that they wanted a blockchain solution that can work on multicloud. Where the network operator was on AWS and then all the other network members can operate in any cloud or on-premise environment. For that reason, the IBM Blockchain Platform was a perfect fit. It’s the only solution that can run on multiple cloud environments. We can start up in AWS and then have other clouds connect to this solution.

Ken Zimmerman: We are bringing together technology to be used in a collaborative way for a variety of participants. So, to do that, you have to have that mentality going in. They’re all bringing their own pieces to the game.

Vinny Mullineaux: So take this project. Our big propane customer has five suppliers who are all happy to put their data on the blockchain. But those five suppliers are also competitors, so they don’t want the other four seeing their data. So a lot of the stuff that we needed, like privacy and security, all came out of the box with the IBM Blockchain Platform straight away. They also don’t have to migrate their IT system. And that’s massive for us. I just came back from a world gas technology show in Europe last week and in talking to some massive oil and gas companies, they’re very intrigued by the Vertrax Blockchain. A lot of them are with AWS, Azure, Google, Oracle, and some of them have their own private clouds. So the ability of this platform to be available to all those guys was huge.

Ken Zimmerman: One of the most important parts of the project is the user experience. We need technology that is not going to make it more difficult to get that foundation built, but less difficult to build a foundation so that we can spend more time on that user experience.

Vijay Rathna: With the IBM Blockchain Platform we don’t have to worry about making the technology work. We can right away go and build the solution out of the box. Instead of weeks and months to build the technology, we stand up in minutes. And then right away we go and try to solve the actual business problem and build solutions.

Ken Zimmerman: We initially came up with our original sketches. And then the sketches



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became more fleshed out, and finally we had these visualizations. I saw it working one day, and I was like, “Oh, that’s a great sketch.” And Vijay said, “No, that’s the working system.” I was like “Holy cow! This looks great!”

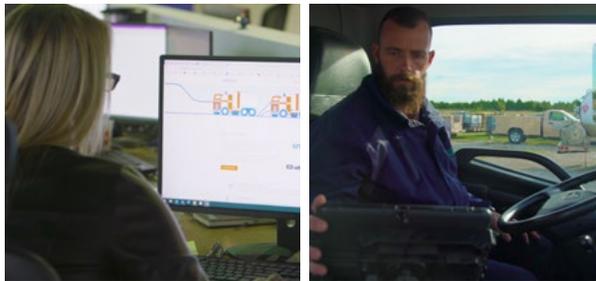
Vinny Mullineaux: Instead of spending years and millions of dollars to build something it took us, what...nine months? I’ve been doing this for 30 years, and I can think of one project that comes in on budget and gets done on time, and it’s this one.

Ken Zimmerman: And it was IBM and AWS working together...

Vijay Rathna: Yeah, we had AWS and IBM teams on calls with us every month reviewing what we had designed. AWS was instrumental in saying use these AWS functions or services at different points, and then IBM was always there supporting us whenever we had a question. And that’s part of the blockchain benefit, right? Two competitors working together.

Vinny Mullineaux: The ability to work on more than one cloud — as well as out-of-the-box functionality like security and data privacy — that’s the real benefit that we provide. We’ve got a platform that works, that is now onboarding participants.

Ken Zimmerman: We all like to think sometimes that technology is only for the professors, but in this case, it really isn’t. It is taking a very technical, very complex solution and making it available and explainable to folks where technology is not the biggest — or even in many cases — any part of their lives.



Vinny Mullineaux: That is huge for these guys. To get a three-day head’s up that there’s going to be a demand spike because of a polar vortex, that he’s going to be a million gallons short. He can juggle things around, he’s not going to lose all his margin.

We’ve actually got something that’s real value, that’s new technology. There’s no oil and gas company out there that can’t be a participant. I’ve certainly ticked my boxes in terms of what I need to show my investors.

Vijay Rathna: Right now we know this can scale for millions of transactions. We are looking forward to new network participants and how we can scale this even further to handle billions of transactions. We’re also looking forward to applying artificial intelligence to get more insight into the data than what humans can predict.

Ken Zimmerman: Many folks say they want to be first, but really, many folks want to be second. They want someone else to be first. But to be first is a really important milestone. You have to be willing to take a risk because it hasn’t been done before. Prior to this, they were saying, “How do you know this is going to work?” Now, the answer is because it works.



Julie Graber,
Business Analyst,
Chateaux Software

Translating the business problem for the technologists

Long before the first block of propane data was added to the Vertrax Blockchain, Chateaux Software Business Analyst Julie Graber played a critical role in bringing the solution to life: translating the business problem presented by Vertrax into the necessary data elements for Chateaux’s enterprise application team to build the solution with the IBM Blockchain Platform.

Julie Graber: Vinny with Vertrax came in with a fantastic idea — bringing oil and gas from the well all the way to the residential user. So there’s a lot of discovery on our end in the beginning, understanding why you want to do this idea. What are the problems?

One of the major goals of the Vertrax blockchain was eliminating unnecessary waste by retailers: driving aimlessly around with unplanned routes, wasting time, money, energy, and even additional operating funds.

They have so much data they’re already capturing. What was critical for their blockchain platform was looking at all of that data, stripping it down and saying, “These are the core pieces that we want in the blockchain. This is going to be essential for this system to operate.”

They have the tank monitoring in place with residential users. They’re monitoring gas at the retailers. Utilizing those systems and putting them on the blockchain can add value to the data. Nationally, and I think even globally, there’s a lot of potential.

Learn how to ignite success on any cloud with the **IBM Blockchain Platform**.



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What will we solve together?
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