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The Role of Blockchain in Navigating Black Swan Supply Chain Events



The novel coronavirus, now officially known as COVID-19, represents the most recent, and perhaps the largest, supply chain disruption in modern history. The global pandemic has resulted in mass buying and the subsequent clearing of store shelves, leading to shortages worldwide. Customers around the world are attempting to come to terms with the new normal, all while COVID-19 continues to redefine supply chain disruption.

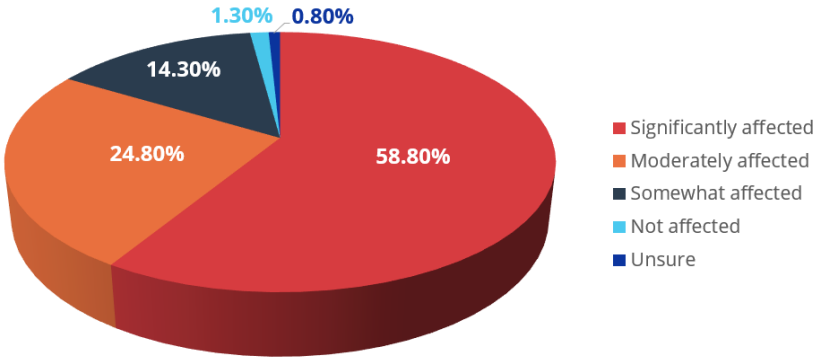
In truth, COVID-19 has brought attention to major deficiencies in the global supply chain. It is truly the ultimate black swan event and is putting companies of all calibers at risk. The pandemic has exposed vulnerabilities, creating trouble across multiple supply chains.

In order to understand the impact of this pandemic on the supply chain better, a recent survey designed to measure the effect of the coronavirus pandemic on global supply chains was conducted by Shipping and Freight Resource.

“One of the most important trends unearthed was the readiness to change supply chain strategies (42.2%), with **59.2%** of responders indicating their operations were **significantly affected**.
— Shipping and Freight Resource

The following graphic shows further shows how supply chain leaders rate the overall impact of the coronavirus on operations as well:

How has Coronavirus impacted your operations?



Source: Shipping & Freight Resource

While the outbreak was originally believed to be isolated to the Wuhan region of China, its rapid spread around the world indicates a global shift in purchasing and buying power. Unfortunately, major misinformation still exists, and recently, 5G cell phone towers were destroyed by the masses due to conspiracy theories linking COVID-19 to the new wireless technology. Instead of simply hoping for the best, today's supply chains must evolve,

“New supply chain technologies are emerging that **dramatically improve visibility** across the end-to-end supply chain, and support companies' ability to resist such shocks. The traditional linear supply chain model is **transforming** into **digital supply networks (DSNs)**, where functional silos are broken down and organizations become connected to their complete supply network to **enable end-to-end visibility, collaboration, agility, and optimization**

— [Deloitte](#)

For that reason and to prevent subsequent disruptions in the future, this white paper will explore:

1

The state of the COVID-19 pandemic and its impact on global supply chains.



2

How blockchain can help by providing the technology infusion needed to prevent a recurrence of this disruption



3

A few best practices to finally achieve transparency, accountability & safety within supply chain mgmt. through blockchain



The State of Supply Chain Amid COVID-19

The global supply chain is broken. For years, supply chain professionals worked on the fringe of anonymity, hopeful that ignorance of risks and perseverance toward a clear, concise, and lean future would lend it best hand. That plan fell terribly short.



There are an **estimated 450 million people** working in global supply chains, many of whom face reduced income or job loss as a result of the COVID-19 pandemic.

Companies around the world are closing shops, cancelling orders, and stopping production. The **garment** industry is particularly hard-hit, but other businesses like **mining, jewelry,** or **automobile** sectors are suffering too. Workers in these supply chains are among the most vulnerable and most affected by the crisis.

If it was not clear before COVID-19, it is now: **Businesses are connected** through a world wide web of global supply chains, and the behavior of large companies impacts those working at the bottom of these supply chains.

— [Juliane Kippenberg via HRW.Org:](#)

It's not simply the forced closure affecting these companies; it's the influence such closures place on those that live and breathe supply chain. Lost revenue to businesses in the supply chain amounts to fewer workers bringing home a paycheck. And if recent U.S. unemployment statistics are any indicator of the future, the global economy is heading down a tragic slope.

How bad will the downturn be? That's a difficult question to answer. China is slowly but surely on the path to recovery as it begins to reopen and ramp up production to help other countries endure the trials of COVID-19.

Coronavirus has **disrupted**
supply chains for nearly

75% of U.S. companies

Source: [Axios](#)

56%

of normal staff reported by
manufacturers in China

44%

did not have a plan for
supply disruption from China

62%

are experiencing delays in
receiving orders from China

48%

are experiencing delays in
moving goods from China

Part of the visibility problem is more severe than any other supply chain challenge and harkens back to an inevitable fact—shipments disappear all the time. Disappearing freight only worsens disruptions. For companies trying to overcome the obstacles today, the biggest and best systems

are still out of reach. Combined with the loss of autonomy in private consortia of blockchain platforms, finding a way to increase visibility and still move freight is challenging.

That's where John Monarch, CEO of ShipChain, sees an opportunity.

ShipChain has entered a partnership with Distichain, reports Robert Anzalone of Forbes. "ShipChain will use its blockchain platform to identify and track shipments for Distichain's clients in the Middle East Region."

Private consortia like TradeLens or GrainChain have a growing base, but ShipChain is in the position to give economic incentives to smaller players. That's the distinction. Lower-cost solutions are more likely to help overcome the massive disruption. Yes, the global supply chain is more dependent on other partners than ever, but most companies remain within the SMB size. The partnership can help SMBs identify shortages and avoid unforeseen losses.

It's a cycle that is only starting to grease the wheels of the global economy, but the U.S. is still weeks away from its peak. This is the time to worry about the global supply chain, and it comes as no surprise that businesses are looking for a way to better track workers and the spread of goods, tools which could also be used to help track and contain a future outbreak as well. That's where blockchain comes into play.



Blockchain Can Provide More Transparency Into the Pandemic-Influenced Supply Chain

The notion of using blockchain to track more than the supply chain was a novel idea, and some outlets tried to explain its value. Experts pushed the idea aside, claiming it was an overly hyped trend. Now, the entire world is working to counteract the effects of COVID-19, and the situation is a worst-case scenario of what experts feared might have happened with the SARS and MERS outbreaks of the earlier 21st century.

But first, let's clear the air for a moment. No technology or capability will ever truly prepare a country for an outbreak of the magnitude of COVID-19, but blockchain could be the solution companies around the world are trying to find. It could be used to avoid lost freight and gain visibility—knowing exactly where freight originated, its movements, and verification of delivery. Stand aside, politics; blockchain can also be useful in tracking people's actions—reducing delays and understanding the epidemiology of outbreaks and their relation to person-to-person contact within the supply chain. But that is a topic for another day. For now, it is best to focus on the use of blockchain to actually improve supply chain operations.

According to [CoinTelegraph](#), some areas can be improved through the implementation of interoperable blockchain solutions.

Tech companies and startups in the industry have recognized this and started to build a few blockchain solutions aiming to track drug supply chains, medical supplies, managing medical data, advising citizens, and identifying symptoms of infection. How exactly?

Blockchain may be a useful tool in tracking donations , ranging from medical supplies to monetary donations to help those suffering endure the crisis.	Immutable ledgers can hasten insurance claims processes , reducing obstacles of filing claims and speeding payment, which are applicable for health, auto, freight loss, and other forms of insurance.	Tracking of the spread of illnesses, which while applied to the COVID-19 crisis, are also useful in tracking potential health risks caused in the food and electronics supply chains, carrying through to every known risk, even choking hazards for small parts in toys.
Outbreak data tracking further offers an opportunity to understand the patterns of spread, learning where the next outbreak will occur, and how to better disseminate goods to avoid complete chaos.	Cross-border payment processing to reduce low-stock issues and ensure timely, accurate payment for goods and services, despite the challenges presented by COVID-19.	

Of course, any improvement in systems' use will always be met with endless questions about "how to improve responsiveness through disruption?"

How to Improve Supply Chain Responsiveness Amid Coronavirus

Supply chain leaders need to start thinking now, during the disruption, about the measures necessary to prevent a subsequent disruption. An ounce of prevention is most definitely worth a pound of cure, and the actions taken by the U.S. Federal Government to avoid economic collapse are a testament to the multi-trillion-dollar costs associated with a failure to plan. To ease the pain and avoid such losses, supply chain leaders need to take these steps immediately:

- ✓ **Integrate new technologies throughout the supply chain to gain more visibility and accountability into all processes.** Integration of the IoT, blockchain, analytics, big data, and cloud-based capabilities will further the goal of diversification of supply chain management assets and provide a larger view in the state of the supply chain and how to better respond.
- ✓ **Centralize supply chain controls with cloud-based, public-access systems, avoiding the problems with limited suppliers and poor access to data.** Centralized supply chain controls also help eliminate concerns associated with managing each location. Centralized controls are also remote worker-friendly, so they go nicely with any disruption management strategy.
- ✓ **Run risk analytics to understand the state of the pandemic's impact on your supply chain, leveraging data to better route freight and avoid further disruptions.** Risk analytics must consider the whole picture, and they must have access to the most accurate and relevant data. Blockchain can provide the unbreakable chain of information needed to improve risk analytics.
- ✓ **Take advantage of experts that know how to best deploy and leverage blockchain in the supply chain, including software vendors and blockchain-based startups that can create customized, off-the-shelf solutions with a lower investment cost and proven results.** For example, ShipChain [has taken steps](#) to help strengthen partnering supply chains by waiving initial costs of implementation in favor of a global, timely response.
- ✓ **Recognize that lean does not always amount to responsive supply chains.** A key problem with the state of the COVID-19 pandemic lies in the bare store shelves. Customers want a sense of control, and nothing is more worrisome than hurricane-like panic buying well before an outbreak has reached home. That's where we are today. Where we need to be is in the staging areas to avoid that emptiness and reassure customers that we are stocked and ready. Yes, social distancing is the new normal, but with all the pumped-up attitudes surrounding omnichannel and e-commerce ordering, customers could easily take care of the distance part, provided supply chains have the supply.
- ✓ **Diversify carriers and workforce solutions.** Your current workforce is your powerhouse, but what if they get sick? What happens when employees organize a strike, regardless of what your union rules stipulate? If the workers decide not to show, due to illness or personal belief, what is your recourse? Your company needs an alternative, and since you cannot predict what will happen, make sure you can prove what your company is doing to avoid the risk of contamination and spread of illnesses.

Summary: COVID-19 Response Will Continue for Weeks

COVID-19 continues to undermine supply chain efficiency and productivity. Supply chain leaders should take advantage of the idle time, if any, to rethink supply chain strategies and work to prevent further disruption in the future. Since some talk exists over whether COVID-19 will return in the fall, now is the time to act. It's that simple, and it's also that important to the public health and the health of your supply chains.

