WHITEPAPER — APRIL 2020

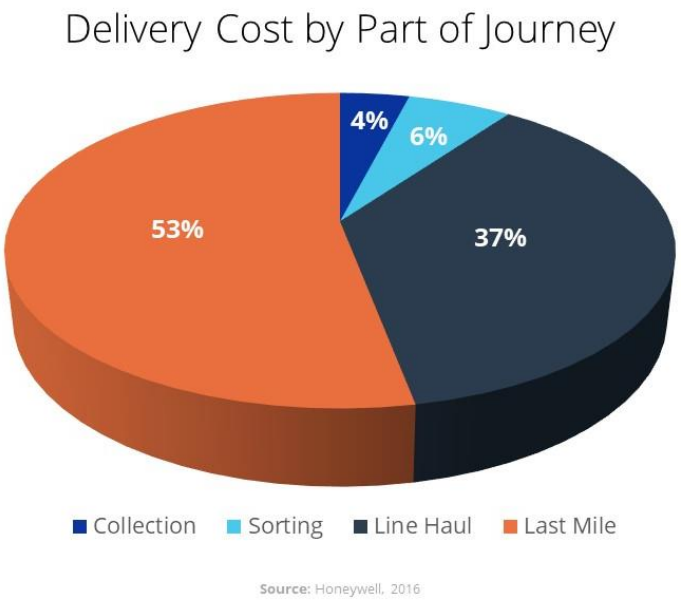
How will Blockchain improve Last Mile visibility?

SHIPCHAIN™

Supply chains advance more with each passing day. Their continued growth represents the culmination of technology, economies of scale, and e-commerce demand. As software-as-a-service (SaaS) grew to power, the standards of legacy technology and visibility started to decline. Now, the global supply chain has a problem with visibility—a lack of Last Mile visibility.

Last Mile visibility refers to the need to see a shipment's status after its scan upon loading onto a delivery vehicle. The United States Postal Service (USPS) is the oldest Last Mile logistics supplier in the U.S., and UPS and FedEx are the newest global companies to service the Last Mile. But, Last Mile is changing in the wake of technological advancement, notes Supply Chain Dive.

Last Mile is the most critical phase of logistics as it typically ties in the end-user. It is also the most costly.



Really, any transaction between two parties, such as shipping products from the manufacturer to a reseller, includes the Last Mile stage. As a result, it's best to define the Last Mile as the final delivery, or movement, for a shipment before it's purchase, whether it’s shipping to a consumer or other storage.

Failures within the delivery of the goods render all prior movements and gains useless. If the package is not delivered on time, gets lost, or endures damage, customers will not blame the carrier. They will look beyond the carrier and hold the shipper accountable.

To recap, both business-to-business (B2B) and business-to-consumer (B2C) logistics include a Last Mile phase. Unfortunately, significant problems remain, including the relative costs of sending freight by larger trucks, tightening capacity in the market, unstable political regions, and more. To

maximize value and control freight spend, shippers need to understand the full Last Mile picture, including its potential solutions via blockchain. This white paper will seek to provide that image, including a focus on:

1

The challenges and costs of Last Mile

logistics and poor visibility.

2

How blockchain enables visibility

and proactive management of freight.

3

The value of better visibility

within the Final Mile & throughout the supply chain.

4

Best practices to augment visibility

through blockchain and avoid traps by largeco's that want to control data.

Defining Core Supply Chain Functions and Blockchain

The challenges of Last Mile logistics derive from the need to arrive on time and avoid damaging the package. Depending on whether the shipment is B2B or B2C, Last Mile can involve much larger packages than parcel, including items that may require specialized delivery. Consider these critical challenges in Last Mile logistics:

- Increased fuel costs resulting from multiple stops.
- Several stopping points during which anything may go wrong.
- Increased risk for damage, such as mishandling packages, within the vehicle.
- Increased risk for delays, leading to a missed delivery window.
- Demand for better planning for B2C deliveries.
- Transformation of the industry, i.e., the "Amazon Effect" and changing delivery options.
- Dwindling pool of delivery drivers, especially given the outsourcing to third-party driver aggregators.
- Additional regulations that restrict drivers, including both HOS regulations and local laws governing the use of personal vehicles for business purposes.
- Increased demand for value-added services, such as equipment installation, debris removal, and more.
- Inability to connect systems to share, understand, and apply data.

How Blockchain Will Empower Supply Chain Management

Everyone wants more visibility in their supply chains. The benefits of increased visibility are apparent; it reduces the risk of fraud, theft, and subpar customer service. Depending on the value of assets, claims may arise from damage during delivery, poor functioning, counterfeit freight, and more. There are also instances where customers knowingly report false damages. Visibility solves these problems, effectively enabling customization of Final Mile service, reports Jeff Berman of Logistics Management.

The power of blockchain sounds great on paper as it enables traceability and real tracking of shipments while upping visibility. That said, blockchain as a technology alone is not enough. The same applies to data in its raw form. Yet, when data is analyzed and shared freely through blockchain, the insights begin to grow in value.

Meanwhile, a guaranteed record of events—shared across multiple blockchain nodes—provides complete proof for shipment status. In the Last Mile, more visibility amounts to verifying a shipment's delivery and condition. Now, blockchain does nothing to prevent porch pirates or theft for carriers using just-leave-on-porch (JLOP) delivery options. There will always be some risk involved. But there is huge value in guaranteeing what happened, when it happened, and holding the appropriate party accountable. Remember, modern shipping requires faster service and delivery, says Business Insider. Therefore, eliminating the hassle of tracking freight and verifying its history provides a boost to speed and other operations critical to fulfilling orders faster.

Increased traceability and integration with customer-facing systems have natural implications for improved customer satisfaction. Imagine a scenario where a customer wants to locate their package while it's in transit. The carrier portal lists the box as "out for delivery." That could be a one-hour or a five-hour delivery window, there's really no way for them to know. Instead, imagine the same access point showing the delivery vehicle's real-time location. Since it relies on blockchain, the data is guaranteed. Now, things could still happen to result in delays, but knowing where the delivery is at any time provides peace of mind to customers, the shipper, and also to the Last Mile company delivering the package, notes The Balance Small Business. Guaranteed visibility enables rapid resolution of problems, too, such as identifying recalled products, notifying customers of potential issues, and more.

How to Use Blockchain to Increase Last Mile Visibility and Find the Right Blockchain for Your Enterprise

Since blockchain wasn't initially designed for Last Mile visibility, it can be challenging to find ways to properly apply the technology and reap its benefits. Remember, blockchain is not necessarily the end-all solution. It is a means to realize guaranteed visibility. Unfortunately, blockchain is becoming a term associated with hype, loss of data ownership, and even corporate greed. However, any company could apply blockchain to realize better visibility through real-time data tracking and proof of transport status. To avoid the pitfalls of investing in a subpar system, shippers, freight forwarders, logistics service providers, and other supply chain partners should follow these best practices to maximize the return of blockchain-driven visibility investments:

1. Retrofit your in-house fleet with sensors to track data.
2. Connect your systems with carrier visibility platforms.
3. Get all supply chain partners on board with tracking real-time movements.
4. Upgrade legacy systems to leverage cloud-based technologies.
5. Eliminate the risk for retroactive data tampering/editing.
6. Automate the data collection and reporting process.
7. Never accept a blind, data-free shipment.
8. Apply data to understand weaknesses and strengths.
9. Use analytics to track and manage performance.
10. Retain ownership of your data.
11. Consider the risks of privately held, publicly described blockchains.
12. Hold carriers accountable for failures to “deliver.”
13. Take advantage of automated auditing capabilities.
14. Target the “technology connector” perspective.
15. Consider white-label solutions that integrate with both legacy and modern, SaaS-based supply chain systems.

Summary

It's What You Do With Blockchain That Matters, Not Its Presence. Use It to Provide Visibility Throughout the Last Mile

Blockchain is a ground-breaking technology. It solves the crises associated with putting all data in a centralized storage location by distributing data to dozens of nodes. The nodes store a virtual “copy” of the blockchain, and upon query, they share the data back with a new request. As a result, the nodes either verify or invalidate the request. Thus, every interaction within the blockchain becomes unchangeable and ensures all subsequent transactions use the same record. Keeping information intact and accurate are critical aspects of modern supply chain management, and since blockchain relies on growth to hold all parties accountable, it contains natural scalability for data storage. Blockchain provides a verifiable record for a shipment's movements, as well as any activity that generates data. In the Last Mile, knowing what is happening, what will happen, and what has happened are critical to proving delivery or addressing any issues that arose, including damages, lost packages, and more.

The exchange of data explained above has a natural impact on supply chain management. For example, if something does go wrong, the costs of retroactively finding out what happened and how to correct the issue and prevent its recurrence are extreme. Yes, analytics can power those insights at a neck-breaking speed, but even they have limitations. They rely on the accuracy and integrity of data. In a sense, every process in the supply chain relies on accurate, timely information, and blockchain keeps the record accurate and accessible.

Collecting GPS data on delivery vans gives customers the ability to see where a package is, not just that it's "out for delivery." As per Material Handling and Logistics, automating the exchange through APIs increases efficiency and allows shippers and supply chain leaders to focus on their work as opposed to back-office processes. Comparable to the application of raw data, a raw blockchain is useless. It only exists to save data in perpetuity. To reap its benefits, supply chain partners must share their data and rely on blockchain. This is the ultimate win for supply chain visibility—an immutable record for each shipment. Depending on the level of sophistication within standard delivery services, such as photos of delivery, signed documents, and even records to show delivery attempts, blockchain will guarantee visibility—provided the enterprise follows through with its own visibility measures.

Let ShipChain Put the Power of Blockchain to Work in Your Enterprise

Blockchain platforms are not created equally. Private and public blockchains exist, and private blockchains always have some degree of centralization. Instead of risking your company's future, choose a blockchain solutions provider for your Last Mile visibility records. Choose ShipChain.