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Expedited delivery: How transportation companies can thrive with blockchain

Keith W. Dierkx,
Global Industry Leader, Rail, Freight and Logistics, IBM

Stephen Rogers,
VP Blockchain Initiatives for Supply Chain, IBM

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The transportation industry has a long history of resisting all but the most essential innovations. In the face of security threats, logistics inefficiencies, and general uncertainty and volatility, transportation companies have moved at a snail's pace – if at all – to digitize processes, incorporate emerging technologies.

Transportation companies are realizing the status quo is no longer sustainable. Blockchain is a natural fit for inherently fragmented industries, such as transportation, in which close coordination with multiple parties is essential. A distributed ledger technology, blockchain provides a more transparent and secure way to conduct business, resulting in immutable transaction records, finality in tracing ownership and payment, and substantially improved coordination and efficiency. It has the potential to mitigate some of the transportation industry's most persistent challenges.

For example, blockchain technology can help provide:

- Enhanced security
- Trust in digitized data
- Improved logistics management across the ecosystem
- More efficient industry interactions

To understand how blockchain can revolutionize the transportation industry, the IBM Institute for Business Value surveyed 202 transportation executives in 16 countries.

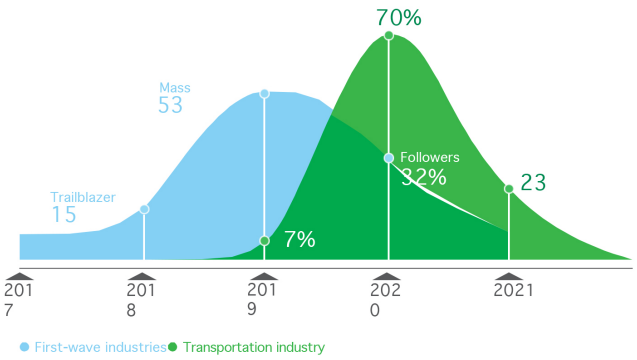
GROWTH

Blockchain has already established a foothold in several industries. In the first wave of industries we surveyed – banking, financial markets, healthcare, government and electronics – a cumulative 15 percent of organizations surveyed planned to have commercial blockchain solutions at scale by the end of 2017, and a significant majority said they expected to have such a solution in production by 2019 (see Figure 1).

"More than half of First Movers in transportation work directly with physical assets that move through multiple intermediaries."

Figure 1

Climbing high: Transportation industry adoption rate compared to the first wave of industries (banking, financial markets, healthcare, government, electronics). Transportation has the greatest number of respondents who expect to have a blockchain solution in production in three years.



Source: IBM Institute for Business Value analysis.

In transportation, progress, as might be expected, has been slower. Only 7 percent of transportation executives say they expect to have a commercial solution in place by 2019.

INSIGHTS FROM EARLY ADOPTERS, OR "FIRST MOVERS"

Fourteen percent of those we surveyed are working with and investing in blockchain now. These "First Movers" are investing in blockchain solutions in one or more of these business areas:

- Shipment status/tracking
- Payment processing
- Shipment security management
- Customs/border management
- Empty container management
- Partner data sharing
- Chain of custody verification.

More than half of First Movers in transportation work directly with physical assets that move through multiple intermediaries. For transportation companies, tremendous benefit can be gained by the immutability of transactions built into blockchain – assuring that the product shipped is the product received, providing tamper resistance and much more. Consider, for example, the numerous transactions surrounding container shipping, which is multi-modal and involves multiple parties at many different shipping stages and locations. With the complexity of these various transactions that span multiple intermediaries, First Movers expect blockchain to help remove transactional inefficiencies from the transportation ecosystem.

REDUCING FRICTIONS THAT IMPEDE PROGRESS

We defined three friction domains that blockchains can help overcome: information, interaction and innovation.

Within those three domains, First Movers in transportation expect to use blockchain to diminish four specific frictions that impact regulatory restraints and facilitate fluidity across the supply chain – restrictive regulations, imperfect information, too many intermediaries, and risk of new entrants to the industry.

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"Blockchain could enable all parties in the transportation ecosystem to share the same 360-degree view of each and every shipment..."

Restrictive regulations – Within transportation, moving goods across multiple borders is common. This entails dealing with multiple customs agencies, government entities and other regulatory bodies.

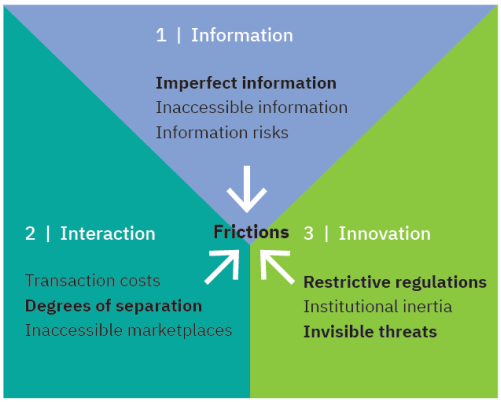
Imperfect information – Decision making is impeded by inaccurate, misleading or incomplete information, or by information that is inaccessible because of non-standard processes or shortage of scalable computing power and storage.

Degrees of separation – This is the distance from the company to the end-user.

Invisible threats – These are risks and threats that are difficult to detect or plan for, such as new business model disruptions or new competition.

Figure 2

Frictions framework: Blockchains are expected to greatly reduce frictions



BALANCING BLOCKCHAIN'S POTENTIAL

Blockchain technology offers the means to help reduce cost, time and risk. Transportation executives say the top three ways blockchain can help in these areas is by creating efficiencies in payment processing, partner data sharing and shipment status and tracking.

Transportation industry First Movers also expect blockchain to open new business models, particularly surrounding payment processing, chain of custody verification and partner data sharing, each of which was cited by more than 70 percent of respondents. These three topics are closely interrelated, as companies that doubt the veracity of the data they are given from partners are likely to dispute payments.

Blockchain could enable all parties in the transportation ecosystem to share the same 360-degree view of each and every shipment, thus making it almost impossible to doubt the validity of charges found in an invoice.

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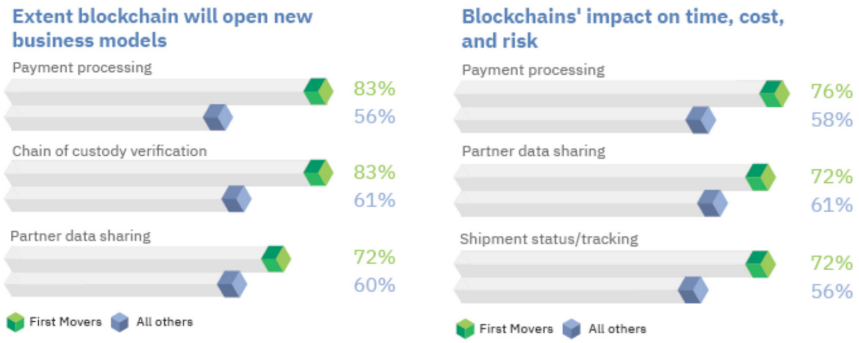
"First Movers are intentionally focusing their initial blockchain efforts in transportation areas with higher potential for digitization of transactions among all parties involved."

Figure 3

New business models:Transportation executives expect blockchain to create new opportunities.



RECOMMENDATIONS

First Movers are intentionally focusing their initial blockchain efforts in transportation areas with higher potential for digitization of transactions among all parties involved. Transport companies that understand blockchain's transformational potential must lead the industry to reap the rewards of disruption:

Learn intentionally – 52 percent of transportation organizations surveyed identified immature technology, and 50 percent picked inadequate blockchain skills as deterrents to blockchain adoption. While 14 percent expect to have blockchain production in progress by 2020, very few companies will have developed the skills, insights, and organizational agility to leverage blockchain's true transformational potential.

Invest wisely – 52 percent of transportation organizations surveyed lack executive buy-in to kick off or fund blockchain engagements. Leaders will dedicate resources to proven blockchain improvements, but transformation requires enterprise-wide investment in fundamentals, including digitizing and instrumenting transport operations.

Disrupt strategically – 52 percent transportation organizations surveyed see regulatory constraints that will prevent them from adopting blockchain. Supply chains are inherently collaborative, so companies seeking to optimize the disruptive potential of blockchain will work across the transportation ecosystem to develop usable blockchain industry standards.

To best extract value from blockchain technology, we recommend organizations answer three questions:

1. How fast should I move?
2. Can I achieve network-wide standards?
3. How can I scale with new revenue models?

Click here to read Expedited Delivery in its entirety.

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To learn more about TradeLens, an open and neutral industry platform underpinned by blockchain technology and designed to foster greater collaboration and trust across the global supply chain, visit www.tradelens.com

STUDY TEAM

Keith W. Dierkx, Global Industry Leader, Rail, Freight and Logistics, IBM

Steve Peterson, Global Transportation Research Leader, IBM Institute for Business Value

Veena Pureswaran, Global Research Leader, Blockchain, IBM Institute for Business Value

Stephen Rogers, VP Blockchain Initiatives for Supply Chain, IBM

Smitha Soman, Blockchain Business Research, IBM Institute for Business Value

CONTRIBUTORS

The study team would like to thank the following for their contributions to this executive report:

Vijay Anand, Catriona Ewing, Dirk Michelsen, Naman Modi, Mario Louca, Vinit Shah, Carsten Stoerner, and Dee Waddell.

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