Emerge Stronger At A Time Of Uncertainty: Blockchain For Supply Chain

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Overview · Situation · Approach · Opportunity · Conclusion

Overview

The COVID-19 pandemic has thrust many deficiencies in supply chain networks into the spotlight — particularly around visibility and integrity of data. Many supply chain leaders have realized their organizations were not prepared to handle significant disruptions to their networks in a timely way, if at all. However, this realization has begun to elicit significant change: Companies are pushing toward further, and rapid, digitization of supply chains by adopting emerging technologies like blockchain to improve data quality, integrity, and visibility that will allow firms to adapt to challenges in real time.

IBM commissioned Forrester to conduct a study investigating how supply chain leaders are using data to handle disruptions today and how adoption of blockchain can help in the future.

Key Findings

Supply chain disruptions have a negative ripple effect on the entire organization. COVID-19 has emphasized this and exposed greater infrastructure issues.

Proper data and automation paired with digitized models aid in supply chain problem solving, effectiveness, and efficiency — all areas where blockchain flourishes.

Blockchain for supply chain users enables transformative benefits, especially in common and crucial problem areas such as data integrity.

Overview

Situation

Approach

Opportunity

Conclusion

COVID-19 Shines The Spotlight On Supply Chain Issues

The COVID-19 pandemic has caused massive disruptions in supply chain networks, creating new challenges for both the short (63% have seen short-term challenges) and long term (45%). However, beyond the new problems it has caused, COVID has illuminated many existing structural problems in supply chain infrastructure. While supply chain decision makers in our survey unsurprisingly ranked the pandemic as by far the biggest disruption they've faced in the past 12 months, they also indicated issues with price fluctuations, transportation failures, technical outages, cyberattacks, and more. These issues are not new, and they will not dissipate as companies adapt to a new normal post-pandemic. Supply chain organizations must ensure they can adapt quickly as problems arise.

"Which of the following have caused disruption in your supply chain in the past 12 months?"
(Top eight disruptions shown)

77%	Pandemic
32%	Suppliers going out of business
29%	Price/currency fluctuations
23%	Transportation failures
23%	Unplanned technical or communications outages
21%	Product problems
21%	Cyberattacks and/or data breaches
20%	New laws or regulations

Overview

Situation

Approach

Opportunity

Conclusion
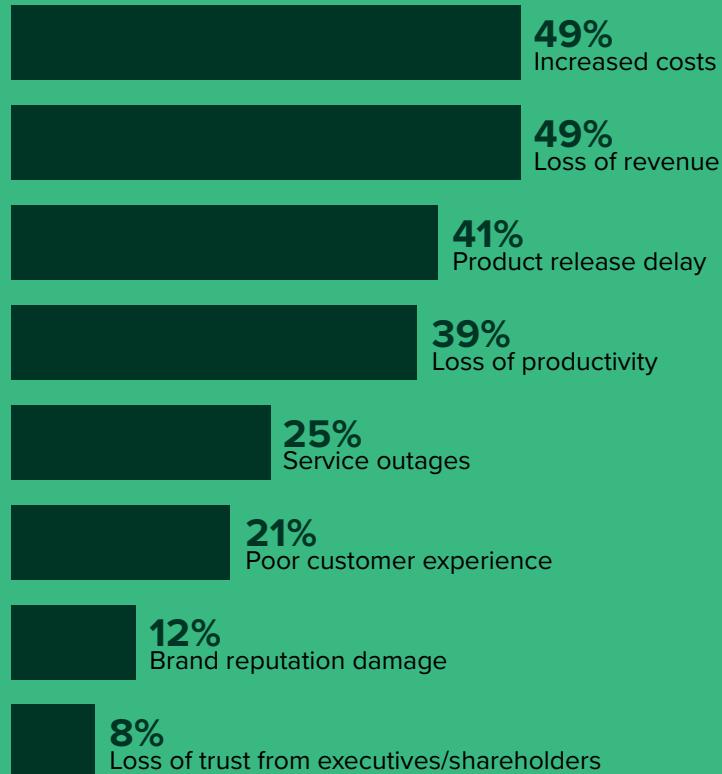
Supply Chain Disturbances Negatively Impact The Whole Organization

Supply chain disruptions are not merely isolated to the supply chain; they affect the entire organization. Our respondents indicated that due to the disruption in their supply chains, their firms have been hit at both the top and bottom lines; nearly half of respondents reported loss of revenue and increased costs. Supply chain disruptions keep the business from reaching its potential by delaying product releases, hurting productivity, and creating poor customer experiences.

Pandemic-related disruptions have also amplified the planning challenges companies face when they don't have enough visibility into their supply chains: It's impossible to plan or make customer commitments if you have no idea where your goods are at a given point in time. The entire business is also negatively impacted if it's not possible to onboard new suppliers or buyers in a short timeframe.

"Which of the following consequences has your organization experienced due to disruption in your supply chain?"
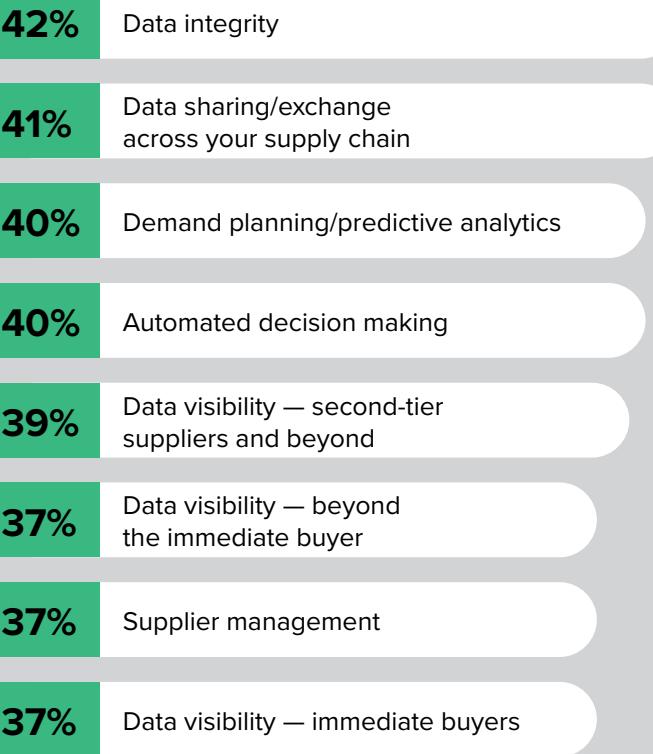
49%
Increased costs

49%
Loss of revenue

41%
Product release delay

39%
Loss of productivity

25%
Service outages

21%
Poor customer experience

12%
Brand reputation damage

8%
Loss of trust from executives/shareholders

Base: 150 NA and EMEA supply chain decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, July 2020

Overview

Situation

Approach

Opportunity

Conclusion

Trusted Supply Chain Data Is Imperative For Resolving These Issues

Many organizations weren't and still aren't well enough prepared to anticipate and rectify supply chain disruptions, which exacerbates these issues. The root cause: Firms simply do not have the trustworthy supply chain data needed to solve problems as they arise. Most decision makers indicated that their organizations struggle with a lack of data integrity, data sharing, and data visibility with suppliers and buyers, especially tier 2 and beyond. This inevitably means that predictive analytics and automated decision making are also challenges, as those have to be fueled by the trustworthy data.

In a nutshell: Data is at the heart of the problem — and also the key to the solution. Having access to timely and trustworthy data is the foundation for addressing today's supply chain challenges and making an organization fit for the future.

"How challenging are each of the following aspects of supply chain management at your organization?"
(Top eight challenges shown)

42%	Data integrity
41%	Data sharing/exchange across your supply chain
40%	Demand planning/predictive analytics
40%	Automated decision making
39%	Data visibility — second-tier suppliers and beyond
37%	Data visibility — beyond the immediate buyer
37%	Supplier management
37%	Data visibility — immediate buyers

Base: 150 NA and EMEA supply chain decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, July 2020

Rapid Shift To Digital Supply Chain
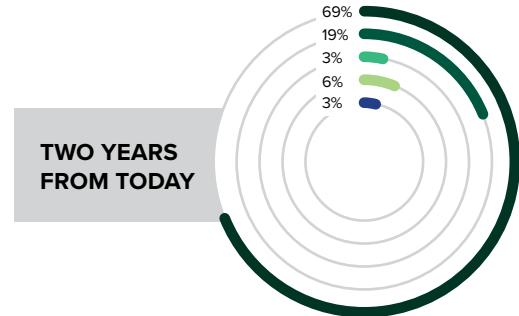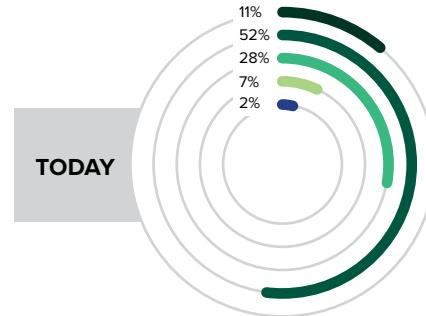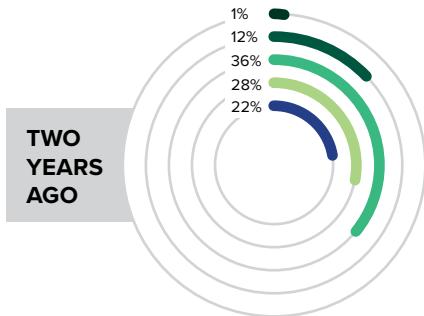
Though supply chain digitization isn't new, most firms still rely heavily on paper processes, have implemented purely internal IT systems, and have disjointed electronic processes (e.g., email, spreadsheets). The pandemic has served as a sharp reminder that firms must do more. Decision makers said their top priorities over the next year are to improve efficiency (69%) and digitize their supply chain with new technology (59%).

That's why supply chain decision makers are forcing the pace on further digitization. Only 1% of decision makers described their supply chains as completely digitized two years ago; 11% are there today, and 69% expect to be completely digitized within the next two years.

The percentage of completely digitized supply chain firms is expected to increase 6x in the next two years.

"How digitized is your organization's tracking of supply chain?"

● Completely digitized   ● Mostly digitized   ● Even split between manual and digital   ● Mostly manual   ● Completely manual (e.g., paper based)

TWO YEARS AGO

1%
12%
36%
28%
22%

TODAY

11%
52%
28%
7%
2%

**TWO YEARS FROM TODAY**

69%
19%
3%
6%
3%

Base: 150 NA and EMEA supply chain decision makers
Note: Percentages may not total 100 because of rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, July 2020

Overview
Situation
Approach
Opportunity
Conclusion

Overview

Situation

Approach

Opportunity

Conclusion

Blockchain For Supply Chain Is Still In The Early Stages

Many leaders are turning to blockchain as their firms continue to modernize and digitize supply chain technology. In our study, 63% of respondents indicated their organizations use blockchain today. While, for many, those deployments are still fairly small and often still in the proof-of-concept or pilot phase, nearly three-quarters of those using blockchain today are expanding their implementation, which indicates fairly nascent usage of the technology.

But the blockchain component is only one part of the solution. Decision makers often underestimate the business challenges blockchain poses: agreeing on process flows, developing appropriate governance models, and establishing the required legal agreements, to name a few. Realizing the full potential of blockchains also requires a degree of collaboration that few organizations are used to.

"What are your company's plans when it comes to utilizing Blockchain/distributed ledger technology (DLT) for your supply network(s)?"

2% Not interested

2% Decreasing or removing

11% Interested but no plans to implement

43% Expanding or upgrading implementation

24% Planning to implement in the next 12 months

19% Implemented, not expanding/upgrading

Overview

Situation

Approach

Opportunity

Conclusion

Blockchain Addresses Key Supply Chain Needs

Many supply chain decision makers aren't yet aware of the full potential of blockchain technology — especially those not using it today. However, they unquestionably see the need for improvements in areas blockchain can address. Most respondents saw value in improvements to data integrity, automation of business processes, a single shared data source, and the tokenization of digital and physical assets — all actions blockchain can support.

Blockchain supports multiparty processes around trusted data that is shared and distributed across organizational (and potentially national) boundaries. Improvements like a better understanding of where goods are at all times, knowing the condition goods are kept in, data accuracy, and improved supplier management are fundamental to solving the challenges that plague many supply chain firms.

"How valuable would each of the following be for your organization?"
(Valuable/Very valuable)

Improved data integrity	88%
Digitization of paper	85%
The automation of business processes	84%
Single, shared data source	83%
The tokenization of digital and physical assets	76%

Base: 150 NA and EMEA supply chain decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, July 2020

Overview

Situation

Approach

Opportunity

Conclusion

Blockchain Can Deliver Transformational Benefits — Today
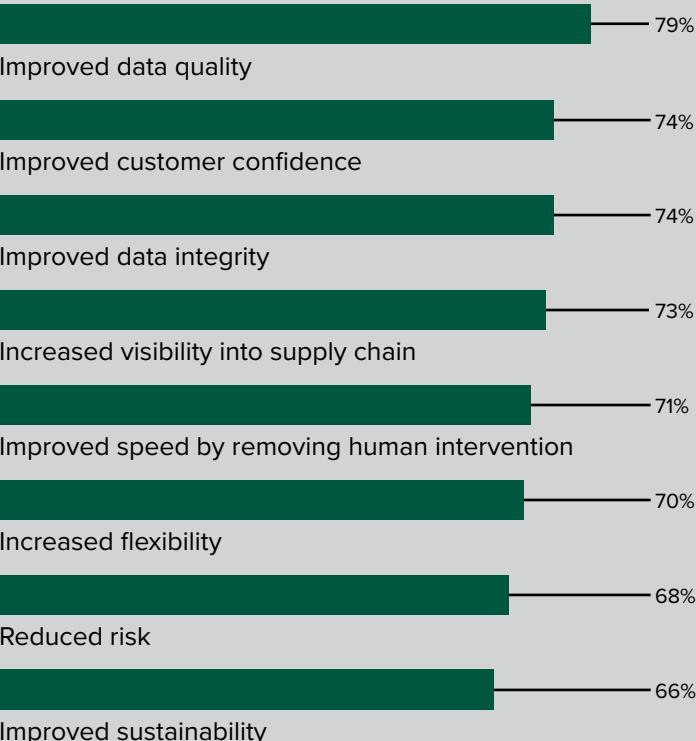
Those using blockchain today are seeing significant, and often transformational, benefits to their supply chains — particularly around their use of data. Even without leveraging the full potential of blockchain technology, such as supporting fundamentally redesigned processes and the tokenization of assets, 79% of decision makers reported significant improvements in data quality, and nearly three-quarters cited significant benefits in data integrity and visibility. This has led to reduced risk, improved customer confidence, flexibility and sustainability, increased speed, and many other benefits to supply chain organizations and businesses as a whole.

79%
of decision makers reported significant improvements in data quality from using blockchain for supply chain.

"To what extent has your organization seen the following benefits from using blockchain for supply chain?"
(Top eight benefits shown)

Benefit	Value
Improved data quality	79%
Improved customer confidence	74%
Improved data integrity	74%
Increased visibility into supply chain	73%
Improved speed by removing human intervention	71%
Increased flexibility	70%
Reduced risk	68%
Improved sustainability	66%

Base: 95 NA and EMEA supply chain decision makers using blockchain
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, July 2020

Overview

Situation

Approach

Opportunity

Conclusion

Conclusion

Blockchain has been one of the most overhyped and least understood technologies in recent years. But — as this study has also shown — companies are deriving real benefits from their blockchain deployments today. Our study found:

- COVID-19 is not the first major disruption supply chain networks have faced, nor will it be the last. Supply chain leaders must be prepared.

- The current state of supply chain has rapidly accelerated the need for digitization. During this process of transformation, organizations must keep an eye toward maintaining strong data quality and integrity.

- Blockchain provides significant value to supply chain organizations. Organizations need to leverage it strategically to meet their pressing needs.

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Contributing Research:

Forrester's CIO research group

Overview

Situation

Approach

Opportunity

Conclusion

Methodology

This Opportunity Snapshot was commissioned by IBM. To create this profile, Forrester Consulting conduced a custom survey of 150 NA and EMEA supply chain decision makers. The survey began and was completed in July 2020.

ABOUT FORRESTER CONSULTING

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Demographics

COMPANY SIZE

5% 20,000+ employees

15% 5,000 to 19,999 employees

44% 1,000 to 4,999 employees

19% 500 to 999 employees

17% 250 to 499 employees

INDUSTRY (TOP 4)

20% Manufacturing and materials

19% Construction

15% Retail

13% CPG and/or manufacturing

TITLE

52% C-level executive

7% Vice president

41% Director

DEPARTMENT

45% Supply chain

41% Operations

15% Procurement

Note: Percentages may not total 100 because of rounding.