



Driving Strategic Value with IBM Sterling Supply Chain Business Network

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Business Value Highlights

335%
three-year ROI

>\$4
in benefits for every \$1 in investment costs

\$4.61M
per organization per year in total benefits

51%
more efficient management of B2B transactions

41%
faster to onboard new partners

50%
reduced late orders

\$13.73M
higher revenue per year per organization

77%
more efficient IT support of B2B/supply chain platforms

30%
improved customer satisfaction

60%
faster transaction queries, organizations using Business Transaction Intelligence

Executive Summary

Supply chains are under enormous pressure, both to be more efficient and effective, and to be able to support new and emerging business models. In a recent IDC supply chain survey, 60% of companies expected their business to be disrupted within the next three years by a competitor with superior supply chain capabilities. This is partly about commercializing the potential of new digital technologies like artificial intelligence (AI), but it is also about understanding core competency and harnessing the power of ecosystems.

The long-term movement of the supply chain from centrally owned and controlled to one that is highly outsourced and connected to ecosystems has created both opportunity and challenge. The opportunity has been to outsource activities that are not a core competency or are less expensive to external parties. The accompanying challenge of an outsourced supply chain is that the ability to communicate in real-time, and have acceptable levels of visibility both upstream and downstream, has become increasingly problematic. Thus, the emergence of the ecosystem-enabling multi-enterprise supply chain commerce network.

Multi-enterprise supply chain commerce networks are a critical element of both current and future “resilient” supply chains. Any company that runs a supply chain will derive significant value from the capabilities that a multi-enterprise commerce network provides to connect them to ecosystem partners. A network can be a single platform, or it can be a platform integrated with various supply chain applications.

To assess the value of participating in a multi-enterprise supply chain commerce network, IDC spoke with nine organizations worldwide running business-to-business (B2B) transactions and supply chain operations on the IBM Sterling Supply Chain Business Network. They reported that Sterling Supply Chain Business Network has enabled more efficient and effective supply chains by providing end-to-end visibility, automation, and improved integration with trading partners. As a result, study participants have cost-effectively accommodated significant B2B transaction and business growth, while improving the flow of vital information between supply chain partners and customers.

IDC’s analysis shows that interviewed customers will achieve strong value with the Sterling Supply Chain Business Network platform worth an average of \$4.61 million per organization per year (\$315,000 per 1 million B2B transactions). This level of benefits translates to a more than 4-to-1 ratio of total benefits to investment costs as discussed in detail below.

IDC has observed for some years now the potentially transformative role of multi-enterprise, cloud-based networks on the ways in which supply chains will operate in the future.

Situation Overview

Disruption is the hot topic in supply chains today. Physical disruption, certainly, as we are currently observing with the impact of a public health crisis on global supply chains, but also business model disruption, in which companies are finding their supply chains unable to support the data, analytics, and decision-making capabilities necessary for the consumer-centric or personalization-based approaches that are key drivers for growth. If one thinks about disruption through the lens of supply chain resiliency (the ability to respond quickly and effectively to changes in the marketplace), then physical and business model disruption, converge around a similar set of capabilities.

IDC has observed for some years now the potentially transformative role of multi-enterprise, cloud-based networks on the ways in which supply chains will operate in the future. In a few places, we have stated that networks will have the most influence on the future of supply chains because they will enable ecosystem connections that would otherwise not be possible. We believe that the ability to work within the appropriate set of supply chain networks will raise the performance of supply chains materially by connecting in real time to necessary ecosystems and ecosystem partners. In IDC's 2020 Supply Chain Survey, 82% of companies reported participating in at least one multi-enterprise supply chain commerce network, with three-quarters of those participating in more than one. When asked about the importance of those networks to their supply chain in three years, 74% said that they would be very important.

As participation in networks both deepens and broadens, it is our view that we will begin to see supply chain applications that are designed specifically for networks—moving from “enterprise-native” to “network-native” applications, if you will. We expect that by the end of 2021, half of large manufacturers will have begun shifting their supply chain applications from enterprise-centric to network-centric, driving productivity gains of 2 percentage points. We also expect to see a dramatic increase in both the number and the value of supply chain “apps” developed for multi-enterprise supply chain networks.

Ecosystem as Driver of Change

IDC Manufacturing Insights defines a multi-enterprise supply chain commerce network as any platform that facilitates the exchange of information and/or transactions among disparate parties pertaining to the supply chain or to supply chain processes. In today's fast-paced, highly analytical supply chain, the use of networks to facilitate commerce and collaboration across relevant ecosystems

In today's fast-paced, highly analytical supply chain, the use of networks to facilitate commerce and collaboration across relevant ecosystems can mean the difference between meeting supply chain performance goals and not meeting them.

can mean the difference between meeting supply chain performance goals and not meeting them.

- » **The race to innovate:** The speed of change, delivery, and operations drives differentiation—not just in the ability to do the things companies do today better, but as an enabler of new capabilities that were not previously possible.
- » **Turning data into value:** It is IDC's view that the ability to collect and analyze all available data, and convert it to actionable insights in real-time, will most differentiate the top supply chains of the future from their more pedestrian competition.
- » **Rising customer expectations:** Customers expect more convenience, customization, and control.
- » **Increasing collaboration:** The connected and intelligent enterprise means next-level collaboration across both supply chain partners and customers.
- » **Avoiding/minimizing disruption:** The ability to not only see what is happening, but also react faster than competitors to seize on supply chain alternatives, will mean reduced "time to recovery" and improved overall business performance.

The impact of a multi-enterprise supply chain commerce network is a balance between what companies need today and what they may need in the future. It is important to understand how networks can improve the supply chain as it exists today, but also to remain mindful about what the longer-term supply chain looks like and where new technologies, access to network data, and consumer expectations will dramatically affect the way that supply chains operate.

IBM Sterling Supply Chain Business Network Overview

IBM Sterling Supply Chain Business Network is a cloud-based business network that enables companies to streamline connectivity with supply chain partners and customers across their supply chains by digitizing and automating B2B transactions. It provides rapid engagement with more than 800,000 preconnected trading partners exchanging billions of documents annually.

Companies can seamlessly scale to support their growing business needs with trusted, rapid implementation and partner onboarding. Businesses are supported

IBM Sterling Supply Chain Business Network is the foundation of IBM's Sterling Supply Chain Suite—an open, integrated platform that connects supplier ecosystems while leveraging advanced technologies like AI to turn data into insights.

by always-on availability (24 x 7 x 365). Around-the-clock support through a designated technical expert acts as an extension of a company's team to help deliver business objectives.

IBM Sterling Supply Chain Business Network is the foundation of IBM's Sterling Supply Chain Suite—an open, integrated platform that connects supplier ecosystems while leveraging advanced technologies like AI to turn data into insights. It provides end-to-end visibility, real-time insights, and recommended actions to turn disruptions into opportunities.

IBM Sterling Supply Chain includes a wide range of multi-enterprise applications covering order management, inventory visibility, and supplier management. While not all components are needed to observe results, the full suite is available to customers. For this ROI report, IDC interviewed clients using Sterling Supply Chain Business Network and the following supplier-collaboration applications:

- » **Business Transaction Intelligence** is a visibility application that leverages AI to deliver deep search into B2B transaction. life cycles, so IT and business users have the insights needed to make faster and more informed decisions.
- » **IBM Sterling Web Forms** eliminates paper-based transactions with small and seasonal trading partners by offering a web-based platform to exchange business documents in Electronic Data Interchange (EDI) format.
- » **e-Invoicing** helps companies transform and optimize their international invoicing processes to reduce the risk, cost, and complexity associated with cross-border tax-compliant electronic invoicing by automating manual invoice processing, archiving, and auditing in accordance with tax regulations for multiple countries.

Optimizing B2B and Supply Chain Operations with IBM Sterling Supply Chain Business Network

Interviewed organizations are using Sterling Supply Chain Business Network in the context of their ongoing need to optimize their B2B and supply chain operations from a cost and performance perspective. Their businesses depend on connecting with supply chain partners and customers with ease even as their business relationships expand and become more complex, and they increasingly require deep visibility into operational data and information that informs supply chain and business decisions.

They spoke to these challenges:

» **Obtaining visibility into transaction data to support customer service efforts:**

“Our biggest challenge was just getting our customer service team to be able to search data and view transactions. They just were not able to do that with our old solution. Fundamentally, the users could not see the data ... which wasn’t business-friendly at all.”

» **Needing to navigate the varying connection needs of transaction partners:**

“Probably the biggest supply chain challenge we face is the proliferation of different standards and the failure of customers to actually adopt standards, so we have lots of customers wanting to use their own proprietary methods.”

Interviewed organizations concluded that Sterling Supply Chain Business Network offered the functionality, scalability, and performance required by their B2B and supply chain operations. Their previous B2B and supply chain platforms—which included a mix of other vendor solutions, third-party services, in-house manual processes, and previous-generation IBM solutions—could no longer handle the volumes and speed at which they operate. They needed an integrated platform that could deliver a strong experience to partners and employees across their supply chains. They spoke to the reasons they chose Sterling Supply Chain Business Network:

» **Real-time scalability:** “Using Sterling Supply Chain Business Network was a no-brainer because of the scalability. It was taking several of us a day to two days to get information and put it in useful form, but Sterling Supply Chain Business Network does it in real time.”

» **Single integration platform to deliver quality, timely integration:** “Our customers were demanding more and more integration with their suppliers. We were struggling with their diverse requirements and having to kind of come up with ways to integrate with every customer. This was a challenge purely in terms of our ability to do it as well as the pace that we’re able to do these things. We looked to Sterling Supply Chain Business Network for one source of integration.”

Now we’ll look at how the increase in operational data is impacting organizations, and how some are able to turn this data into actionable insights.

Perhaps the biggest opportunity for the supply chain today is the capability to turn data into actionable insights.

Turning Data Into Insights

Perhaps the biggest opportunity for the supply chain today is the capability to turn data into actionable insights. In discussions with manufacturers and retailers,

An important emerging use case for AI is the ability to augment human capability in responding to data insights.

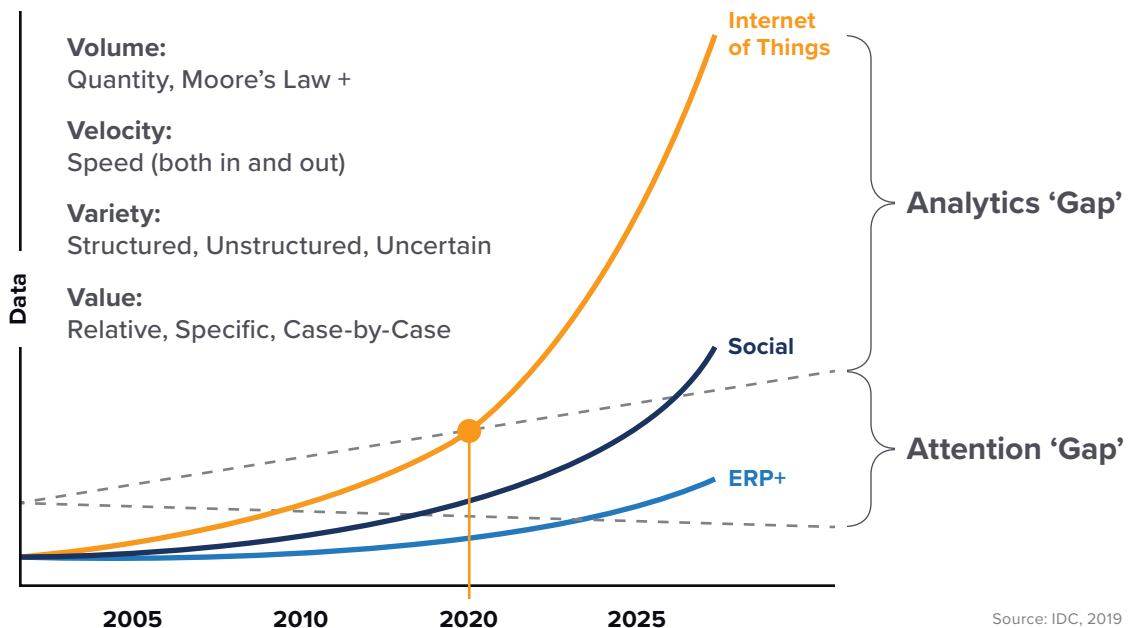
they consistently lament both the limitations of analytical capabilities within their business and the lack of data-savvy supply chain people resources to turn insights into timely and proper actions.

Although there's no real surprise in the growth of data, companies frequently find themselves either without the analytics capability to handle that data or lacking the response mechanisms to act on the insights from that data. AI tools like Business Transaction Intelligence provide a robust framework in which to view the transaction life cycle—in other words, the ability to fully understand data from source to insight and to easily query the data to support faster and more comprehensive decision making.

Although there is some anecdotal data to suggest that analytical capabilities are beginning to catch up to the data (though often not in a timely manner), the lack of people who can act on analytical insights in real-time remains a problem. The companies that say they have adequate analytical horsepower are exploring artificial intelligence to bridge the gap between data and actionable insights. In other words, an important emerging use case for AI is the ability to augment human capability in responding to data insights.

At IDC, we have articulated these challenges in terms of two data gaps, as illustrated in Figure 1.

FIGURE 1
Implications of Data Growth



“Sterling Supply Chain Business Network with Business Transaction Intelligence has greatly increased our efficiency—it’s three people saving 10 hours/week each.”

There is no question that the successful supply chains of the future will be those that better leverage the massive amounts of data that are available to them. But it is not enough only to collect and analyze the data: Those sources must be vetted, and the data verified. Indeed, bad data will invariably lead to bad decisions. The ultimate value to data and analytics is a function of how easy it is to query, thus leading to better and more timely decisions. Supply chains must turn analytical outputs into direct, implementable actions; otherwise, the capabilities are merely academic.

Study participants using Business Transaction Intelligence described various benefits that relate to improved visibility and insights driven by AI and cognitive capabilities. These benefits are reflected in this study’s broader findings regarding the value of Sterling Supply Chain Business Network for interviewed organizations, including:

Modernizing IT and increasing productivity levels using AI

- » **Increased operational efficiencies by 30 staff hours per week:** “Sterling Supply Chain Business Network with Business Transaction Intelligence has greatly increased our efficiency—it’s three people saving 10 hours/week each.”
- » **Improved ability to handle data-related issues:** “We often face challenges in correlating inbound data that has our customers’ own data identifiers. ... If our master data is missing a cross-reference or pointing to an unknown cross-reference, it could cause the order to fail. ... Business Transaction Intelligence allows us to see the data and we can see for ourselves—without involving analysts—what data issues we are facing and react accordingly in a more timely way.”
- » **Achieving operational efficiencies for warehousing team of six hours per week for three-person team:** “We’re able to get better visibility with Sterling Supply Chain Business Network as to when a transaction fails, so our technical teams at warehouses are saving time—across three people, they are saving a couple hours/week each.”

Empowering business users with self-service to obtain the visibility they need

- » **Gaining baseline visibility into order status:** “Sterling Supply Chain Business Network has significantly streamlined our order delivery process. We now have visibility to answer questions related to order delivery as simple as ‘Did you get this order?’”

- » **Customer satisfaction scores improving with the ability to support them better:** “Our customers are more satisfied with the Sterling Supply Chain Business Network because we’re better able to answer questions such as ‘Where’s this document? Did you get this order? Where is this advance ship notice?’ And our customer service team can say, ‘Here you go,’ right now. Now it’s a one-call resolution. Out of 10, we’re probably at 9 now in terms of satisfaction, compared with 7 before.”

The Business Value of IBM Business Transaction Intelligence

IDC conducted two sets of interviews with regard to IBM Business Transaction Intelligence customers:

- 1) Sterling Supply Chain Business Network study participants about their use of Business Transaction Intelligence; and also
- 2) Five IBM Sterling Supply Chain Business Network customers in education, manufacturing, utility, energy/manufacturing, and healthcare industries focused specifically on their use of the Business Transaction Intelligence solution.

Both sets of IBM customers described benefits tied to their use of Business Transaction Intelligence that relate to improved visibility and insights driven by AI and cognitive capabilities.

The interviews focused exclusively on Business Transaction Intelligence confirmed its value proposition from the perspective of IT teams supporting supply chain operations and line of business users who benefit from having much increased visibility and access to business transaction data. These organizations spoke to its positive impact for IT teams that can now complete queries and searches much more efficiently and enable line of business teams to find information on their own without requiring IT support:

- » **Makes EDI accessible to business users:** “IBM Business Transaction Intelligence was actually the reason why we went with the migration to the IBM SCBN platform. What set it apart from all of its competitors is that it’s the first system I looked at and said, ‘Yeah, this makes EDI accessible to my internal customers’. We purchased IBM BTI at the same time as SCBN.”

“IBM Business Transaction Intelligence was actually the reason why we went with the migration to the IBM SCBN platform. What set competitors apart is that it’s the first system I looked at and said, ‘Yeah, this makes EDI accessible to my internal customers.’”

On average, interviewed organizations using Business Transaction Intelligence reported reducing the average time needed to complete transaction-related queries by 60%.

- » **Enables more efficient IT support and querying, saving 15 minutes per query:** “The biggest thing for our IT team is that IBM Business Transaction Intelligence helps us know what’s going on. Before we were saying what it ‘feels like’...it feels like we’ve gotten less orders than before, it feels like things aren’t working right’, because we just didn’t have good insights. Now we can go through BTI and say, ‘Nope, we’re actually above average today.’ And, that’s kind of cool. We can instantly know how we’re doing, and it puts that information in our users’ hands. They’re no longer calling saying, ‘I feel like we’ve gotten fewer orders. Is EDI down?’”
- » **Allowing customer service team to search quickly and efficiently for information, 60% more efficient IT team in supporting searches:** “The benefit of IBM Business Transaction Intelligence is that our customer service team is no longer bombarding IT with ‘Hey, is this received yet? Did you receive this through EDI?’ ... It’s a way of doing searches quickly.”

According to these Business Transaction Intelligence users, IT teams responsible for managing and supporting B2B and supply chain environments realize significant efficiencies, including averages of:

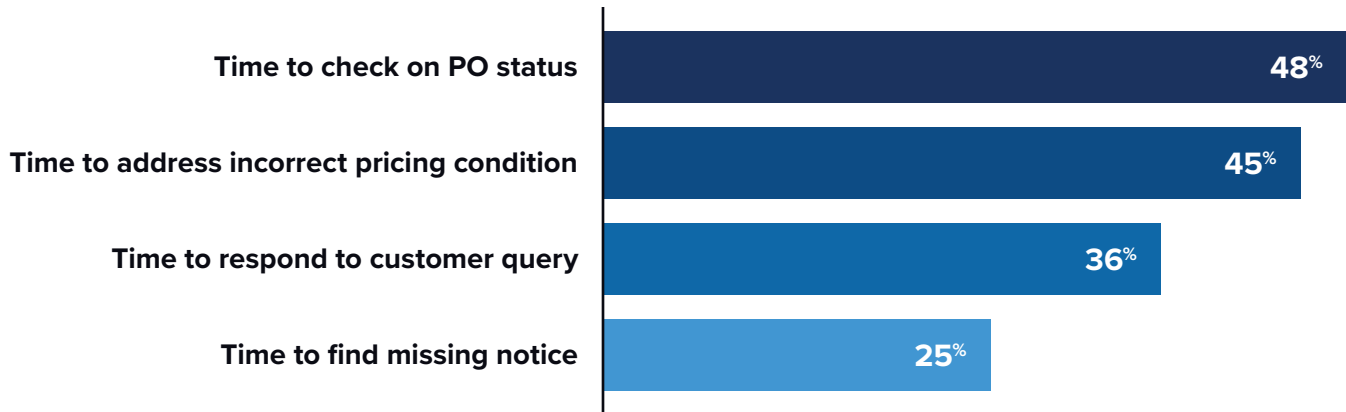
- » 63% less staff time for managing B2B transactions
- » 31% less staff time for supporting business queries for B2B operations
- » 19% less staff time for completing search queries
- » 32% average efficiencies for staff across these three IT-related activities

Figure 2 shows the extent to which Business Transaction Intelligence speeds up the flow of data and information in support of B2B transactions and supply chain operations. **At a base level, these improvements relate to interviewed organizations’ reducing the average time needed to complete transaction-related queries by 60% with Business Transaction Intelligence.**

By substantially increasing query speed, organizations can distribute real-time data in support of operations and minimize IT team time spent on queries. Meanwhile, faster execution of queries generates efficiencies for other supply chain data-related activities, Figure 2 shows the real impact that Business Transaction Intelligence has on various supply chain activities. In turn, these efficiencies mean that supply chain teams work more effectively and better support their businesses.

FIGURE 2

Business Transaction Intelligence Impact on Finding and Using Operational Data (% Improvement)



Source: IDC, 2020

“From a business perspective, IBM Business Transaction Intelligence puts EDI in the hands of business users. It lets them research their own problems when the customer calls with ‘What’s the status of my order?’ ‘Well, did you get it?’”

Study participants provided specific examples of how their B2B and supply chain teams, including customer support, order management, logistics, accounts receivable, and accounts payable teams, among others, benefit from improved visibility and access to data with Business Transaction Intelligence. Interviewed IBM customers provided specific examples that included:

- » **Customer service team benefiting from visibility that allow linking invoices to POs, 7 team members saving 20% of time:** “The eBusiness customer service team uses BTI functionality and searching. ... We use it primarily to find out, ‘Are there any invoices that are linked to the purchase order?’ We have been able to save time using BTI where there are multiple invoices. ...Getting to the invoices quicker and more efficiently helps tremendously.”
- » **Accounts receivable team reacting more decisively and effectively, 40% more efficient:** “Accounts receivable doesn’t have to pull out everything, send it to the EDI team, wait, and then remember what they were doing when the data comes back. It’s a much more fluid process.”
- » **Enabling business users to leverage EDI to support business activities, hundreds of thousands of dollars per year higher revenue:** “From a business perspective, IBM Business Transaction Intelligence puts EDI in the hands of business users. It lets them research their own problems when the customer calls with ‘What’s the status of my order?’ ‘Well, did you get it?’ ‘Oh, we did, it’s shipped. Here’s all the information in one shot.’”

The Business Value of IBM Sterling Supply Chain Business Network

Study Firmographics of IBM Sterling Supply Chain Business Network

IDC interviewed nine organizations worldwide about their use of Sterling Supply Chain Business Network solutions to run their B2B transactions and supply chain activities. Interviews were in-depth in nature and focused on the impact of Sterling Supply Chain Business Network on supply chain and business operations, costs, and business results.

Interviewed Sterling Supply Chain Business Network customers counted an average of 8,553 employees (ranging from 150 to 25,255) and annual revenue of \$3.39 billion (ranging from \$213M to \$14B) at the time of interviews. They provided the experiences of organizations from verticals facing both common and unique B2B and supply chain challenges and opportunities, including having to work with significant numbers of supply chain partners and customers across their supply chains. Table 1 presents further information about these organizations' demographic profiles, including their vertical industries, which include consumer goods (2), food and beverage (2), agriculture, dairy, manufacturing, finance, and retail/wholesale (see Table 1 for further details).

Table 1 provides an overview of interviewed organizations' use of Sterling Supply Chain Business Network at the time of their interviews. The breadth of their use is reflected in connecting to an average of 471 main suppliers and other partners and 28 manufacturing facilities. Meanwhile, the average yearly B2B transaction volume of almost 15 million per organization (14.62 million) evidences the extent to which they rely on Sterling Supply Chain Business Network as a conduit for exchanging information and data with their varied supply chain partners and customers, as well as for their internal business operations. They counted an average of 3,166 employees whose work connects in some fashion to Sterling Supply Chain Business Network, including teams such as manufacturing, logistics, procurement, and other teams (see Table 1 for additional details).

Interviewed organizations use IBM Sterling Supply Chain Business Network to connect with and support an average of 471 main suppliers and other partners and 28 manufacturing facilities, with average annual B2B transaction volumes of almost 15 million per year.

TABLE 1

Firmographics and IBM Sterling Supply Chain Business Network Use

	Average	Median	Range
General Firmographics			
Number of employees	8,553	5,000	150 to 25,255
Number of IT staff	131	35	4 to 450
Number of business applications	91	50	20 to 350
Revenue per year	\$3.39B	\$1.0B	\$213.4M to \$14.0B
Countries	United States (6), Canada, France, United Kingdom		
Industries	Agriculture, Consumer Goods (2), Dairy, Manufacturing, Finance, Food & Beverage (2), Retail/Wholesale		
IBM Sterling Supply Chain Business Network Use			
Number of suppliers and other partners	471	300	4 to 1,500
Number of manufacturing facilities	28	19	0 to 80
Number of business applications	15	5	1 to 75
Number of supply chain users	3,166	1,944	150 to 10,115
Annual volume of B2B document transactions	14.62M	2.50M	216,000 to 104M

n=9 | Source: IDC, 2020

Quantifying the Business Value of IBM Sterling Supply Chain Business Network

Interviewed organizations have made their B2B and supply chain activities significantly more efficient, robust, and functional with IBM Sterling Supply Chain Business Network solutions. They described the impact in concise and tangible terms, citing the enablement of their increasingly digital supply chains and businesses through greater scalability, improved visibility, and robust data quality. As a result, they can handle growth in B2B transaction volumes that come with

“Sterling Supply Chain Business Network has given us scale to grow our overall business and handle sheer transaction volume growth flowing through the network.”

Interviewed organizations have benefited from greater business agility, more timely delivery of products and services, and faster recognition of sales.

supply chain expansion integral to their businesses, as well as make faster, more informed decisions about supply chain operations. Interviewees spoke in detail to these benefits of Sterling Supply Chain Business Network:

» **Higher data quality, ability to handle complex customer requirements:**

“Sterling Supply Chain Business Network has pushed us in a number of areas to improve our own data quality. We are benefiting from having a partner that can help us in terms of dealing with complex customer requirements at a pace that allows us to keep up with customer demand.”

» **Managing strong volume growth efficiently:** “Sterling Supply Chain Business Network has given us scale to grow our overall business and handle sheer transaction volume growth flowing through the network. Without it, we would have had to add approximately 10-15 people to handle the volume.”

» **Fundamental need for a robust business network to meet customer demand:** “In many cases, having Sterling Supply Chain Business Network is table stakes for our business. ... Some of our customers are basically telling us, ‘You will do this.’”

IDC’s analysis demonstrates the strong value that Sterling Supply Chain Business Network customers are achieving, with average annual benefits worth \$4.61 million per organization (\$315,000 per 1 million B2B transactions) in the following areas (see Figure 3):

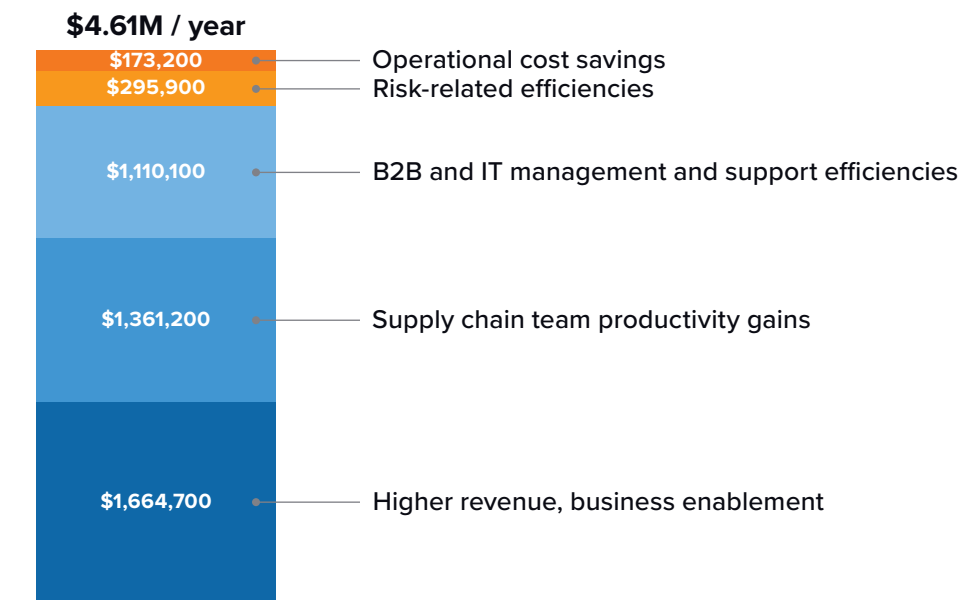
» **Higher revenue:** Interviewed organizations have benefited from greater business agility, more timely delivery of products and services, and faster recognition of sales. As a result, they have realized net revenue increases that IDC quantifies as worth an average of \$1.66 million per organization per year (\$113,900 per 1 million B2B transactions).

» **Supply chain team productivity gains:** Employees whose work relates to supply chains have benefited from improved visibility and automation. IDC puts the value of productivity gains for these employees at an average of \$1.36 million per organization per year (\$93,100 per 1 million B2B transactions).

» **B2B and IT management and support efficiencies:** Teams responsible for executing B2B transactions, responding to B2B-related issues, and managing B2B and supply chain platforms can handle significantly increased workloads with the integrated, scalable, and cloud-based Sterling Supply Chain Business Network platform. IDC calculates that these time savings and efficiencies will be worth an average of \$1.11 million per organization per year (\$75,900 per 1 million B2B transactions).

- » **Risk-related efficiencies:** Organizations have reduced the frequency of supply chain-related outages and improved their ability to comply with regulatory requirements efficiently. IDC projects that they will realize productivity gains worth an annual average of \$295,900 per organization (\$20,200 per 1 million B2B transactions) by limiting risk in these areas.
- » **Operational cost savings:** Organizations have leveraged improved visibility and higher data quality to lower costs in areas such as inventory. IDC quantifies these cost savings as worth an annual average of \$173,200 per organization (\$11,900 per 1 million B2B transactions).

FIGURE 3
Average Annual Benefits per Organization
(\$ per organization per year)



n=9 | Source: IDC, 2020

Business and Operational Enablement Through More Robust and Functional Supply Chains

Study participants not only must carry out their B2B transaction and supply chain activities efficiently, but their businesses also require strong functionality and quality. To meet customer expectations, these organizations have to find ways to deliver top-quality products and services in a timely and seamless fashion, which means having an integrated and highly functional supply chain.

For interviewed organizations, the broader process of creating and delivering goods and services begins with cooperating and collaborating with their hundreds or thousands of suppliers and other trading partners. To work with these trading partners, interviewed IBM customers need to bring them onto their supply chain networks, which can be a time-consuming activity, taking days in most cases, and weeks in some. The amount of time required to complete onboarding is often impacted by factors outside of IBM customers' control, including the actions of their trading partners.

Importantly, study participants reported having significantly reduced the time needed to onboard new partners by an average of 41% with Sterling Supply Chain Business Network, allowing for full engagement 1.5 weeks earlier (see Figure 6, Appendix 1). These reductions demonstrate the extent to which Sterling Supply Chain Business Network can help organizations scale their B2B activities to match the speed of their businesses. For organizations that have sped up partner onboarding, improvements ranged from 22% to 78% faster with Sterling Supply Chain Business Network. One interviewed IBM customer explained: "The total time we need to onboard a new partner has been reduced by 75% with Sterling Supply Chain Business Network. ... On average, it now takes less than five business days—creating a profile, mapping, testing, all of those things. Before, it would have been four weeks on average."

For study participants, bringing new partners into their business networks faster and having better overall visibility into B2B transactions and supply chains translates to important improvements in their ability to serve customers. Optimization of supply chain activities has had a tangible impact on study participants' ability to deliver to their customers' expectations, including:

- » Reducing the average time required to fulfill customer orders by 11%, which helps organizations better meet customer demand and avoid penalties related to late delivery, thereby contributing to revenue gains and reduction of business risk related to their supply chains.
- » Increasing the percentage of orders delivered on time to 95%, up 5% from before use of Sterling Supply Chain Business Network (see Figure 7, Appendix 1).

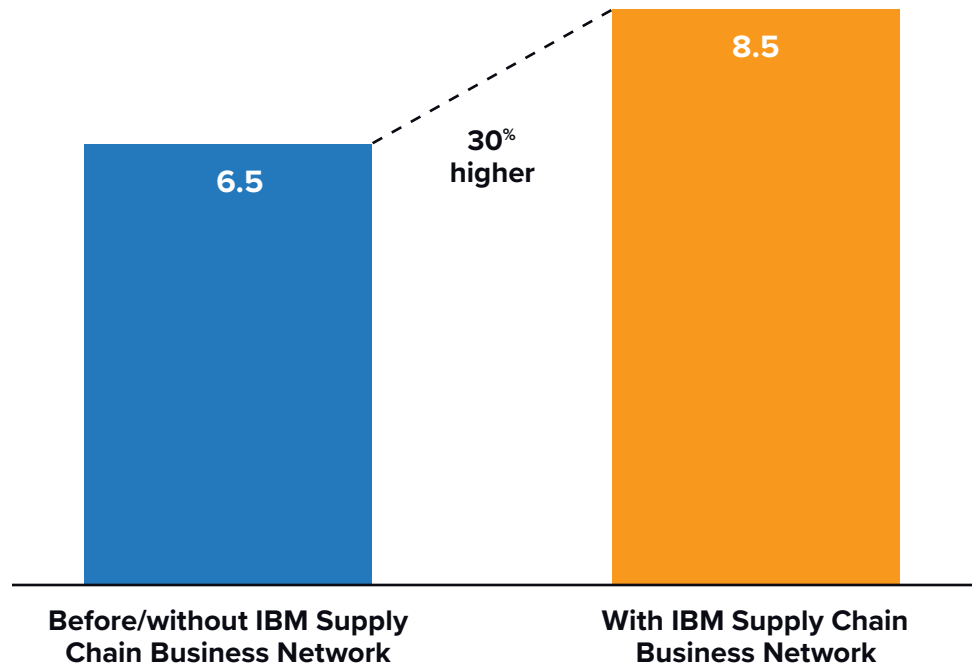
One interviewed organization spoke to the impact on its ability to ensure timely delivery and support business growth: "Before Sterling Supply Chain Business Network, we did not have much visibility, but my guess would be that we delivered 75-80% on time. We're now delivering 100% on time with Sterling Supply Chain Business Network. ... Our business has grown to a huge extent, and we could not have done that with the old system."

"We're now delivering 100% on time with Sterling Supply Chain Business Network. ... Our business has grown to a huge extent, and we could not have done that with the old system."

“Our customers are more satisfied now with Sterling Supply Chain Business Network because we’re better able to answer questions such as, ‘Where’s this document? Did you get this order? Where is this advance ship notice?’ ... Out of 10, we’re probably at 9 now in terms of satisfaction, compared with 7 before.”

Interviewed organizations also linked improved ability to deliver their products and services to higher customer satisfaction. One customer cited its ability to provide better support with Sterling Supply Chain Business Network—and specifically Business Transaction Intelligence—which drives higher satisfaction: “Our customers are more satisfied now with Sterling Supply Chain Business Network because we’re better able to answer questions such as, ‘Where’s this document? Did you get this order? Where is this advance ship notice?’ ... Out of 10, we’re probably at 9 now in terms of satisfaction, compared with 7 before.” Overall, study participants reported having improved average customer satisfaction ratings by 30% (increase from 6.5/10 to 8.5/10) with Sterling Supply Chain Business Network (see Figure 4).

FIGURE 4
Impact on Customer Satisfaction (Customer satisfaction, average: 0 = lowest, 10 = highest)



n=9 | Source: IDC, 2020

Study participants reported that more efficient and robust supply chains have led to positive outcomes for their businesses and operations. These business-related gains are reflected in higher revenue, increased productivity for supply chain employees, and operational cost savings.

Higher Revenue Through Supply Chain Enablement

Although the direct impact of the supply chain on revenue can sometimes be difficult to ascribe directly, there is little question that the ability to support higher levels of product availability, superior customer service, and the ability to personalize as required mean happy customers and consumers.

Interviewees' business success is interwoven with their supply chain operations. They rely on their supply chains to source, manufacture or produce, and deliver their products. Thus, improvements in these areas lead to an improved ability to win and maintain business with higher customer satisfaction, as well as the ability to optimize processes related to recognizing revenue. Study participants provided examples of these business-related impacts of using Sterling Supply Chain Business Network:

- » **Overall important improvements in supply chain and order fulfillment activities:** "With Sterling Supply Chain Business Network, our order-to-cash and purchase-to-pay processes have greatly improved, as has our end-to-end supply chain/order fulfillment process."
- » **Moving forward revenue recognition to improve cash flow:** "We've improved our customer cash flow substantially with Sterling Supply Chain Business Network because we have a working B2B system that improves our invoicing performance. We had a lot of issues with our legacy system that affected about a third of our revenue. We've seen around a 19-day reduction in recognizing business that is partially attributable to Sterling Supply Chain Business Network."

Table 2 shows the significant impact that Sterling Supply Chain Business Network has on interviewed organizations' business results. On average, study participants reported having achieved revenue increases that IDC quantifies as being worth \$13.73 million per year with Sterling Supply Chain Business Network (\$939,000 per 1 million B2B transactions). For organizations operating in very competitive market environments, these types of revenue gains reflect well on the impact Sterling Supply Chain Business Network has on their ability to meet customer expectations and maintain, or even expand, their customer bases.

"We've improved our customer cash flow substantially with Sterling Supply Chain Business Network because we have a working B2B system that improves our invoicing performance."

TABLE 2
Business Operations Impact, Increased Revenue

	Per Organization	Per 1 Million B2B Transactions
Additional gross revenue per year	\$13.73M	\$939,000
Assumed operating margin*	15%	15%
Recognized net revenue impact per year	\$2.06M	\$141,000

n=9 | Source: IDC, 2020 (*IDC applies assumed 15% margin in quantifying revenue and user productivity gains for purposes of its model)

Study participants also described how Sterling Supply Chain Business Network helps employees whose day-to-day jobs interact with their supply chain operations to work more effectively.

Supply Chain Team Productivity Gains

The ability to manage a supply chain for efficiency and effectiveness is critical for companies that aspire to better overall performance. Reducing the numbers of people in the supply chain (while that may provide an opportunity in some cases) is less important than freeing people from some of the rote tasks that consume much of their day in favor of more value-added tasks and opportunities.

Study participants also described how Sterling Supply Chain Business Network helps employees whose day-to-day jobs interact with their supply chain operations to work more effectively. Groups of impacted employees include procurement, manufacturing, logistics, and other teams who depend on the timely flow of information, data, and materials to work efficiently. For example, one IBM customer described the impact on its warehousing team: “We’re able to get better visibility with Supply Chain Business Network as to when a transaction fails, so our technical teams at warehouses are saving time—across three people, they are saving a couple hours/week each.” On average, study participants identified 83 employees per organization who are an average of 26% more productive with Sterling Supply Chain Business Network, which translates to 493 hours per year of additional productive time per supply chain user (see Table 3).

TABLE 3
Productivity Impact, Supply Chain Users

	Per Organization	Per 1 Million B2B Transactions
Number of impacted supply chain users	83	5.7
Percent higher gross productivity	26%	26%
Equivalent FTE gain, higher net productivity	22	1.5
Value of higher net productivity per year	\$1.53M	\$104,900
Hours of additional productive time per year per impacted supply chain user	493	n/a

n=9 | Source: IDC, 2020

B2B and IT Management and Support Efficiencies

Study participants must balance staffing and performance in managing B2B transactions across the supply chain. While the increasing complexity, scale, and speed at which these activities occur demand significant staff time, study participants still must grow and improve their B2B and supply chain capabilities in cost-effective and efficient ways. Interviewed organizations reported that the benefits they have achieved with Sterling Supply Chain Business Network—including much-improved visibility, automation, scalability, integration, and performance—have enabled them to handle significantly higher volume levels while delivering strong supply chain experiences without commensurate increases in staffing. IDC projects that these time savings and efficiencies for B2B and IT teams will be worth an average of \$1.11 million per organization per year (\$75,900 per 1 million B2B transactions).

Supply chain efficiencies begin with improved ability to handle and process B2B transactions across their business networks, including with supply chain partners and customers. With average transaction volumes of more than 10 million per year, interviewed organizations can ill afford inefficiencies in executing these transactions. They uniformly reported that they have leveraged automation, digitization, and integration with Sterling Supply Chain Business Network to scale their ability to handle large B2B transaction volumes more efficiently than they otherwise could have. One study participant noted: “With Sterling Supply Chain Business Network, transactions are all managed automatically.” Another

“We’ve been able to keep our size as it is in terms of people even though we’re now five times the size, because Sterling Supply Chain Business Network automates so much.”

explained: “We’ve been able to keep our size as it is in terms of people even though we’re now five times the size, because Sterling Supply Chain Business Network automates so much.” Overall, study participants reported that their B2B transaction management teams are 51% more efficient on average (see Table 4), which is critical to their efforts to extend their supply chain activities to match business growth cost effectively.

TABLE 4
B2B Transaction Management

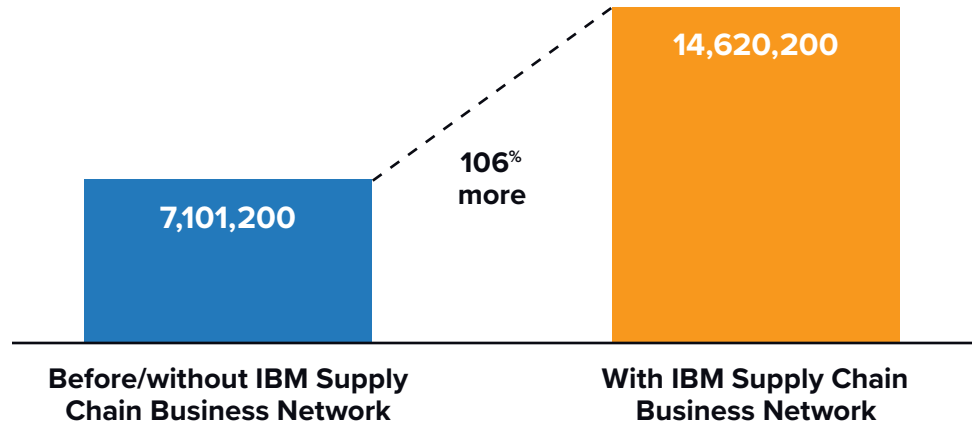
	Before/Without Sterling Supply Chain Business Network	With Sterling Supply Chain Business Network	Difference
FTEs per year per organization	23.2	11.3	12
Staff hours per 1 million B2B transactions per year	2,988	1,451	1,537
Equivalent salary cost per year per organization	\$1.63M	\$0.79M	\$0.84M

n=9 | Source: IDC, 2020

“Our B2B transaction volume is increasing, which is good, but we’d be hard-pressed to handle the growth without Sterling Supply Chain Business Network. With our old system, we would have had to at least double the staff to support this growth.”

Efficiencies in handling B2B transactions add up quickly across millions of transactions per year and materially affect interviewed organizations’ ability to support supply chain expansion. As shown in Figure 5, efficiencies achieved with Sterling Supply Chain Business Network effectively mean that they can handle more than twice (106% more on average) the B2B transaction volume with the same staff resources, a significant operational efficiency. One interviewed IBM customer confirmed this level of impact: “Our B2B transaction volume is increasing, which is good, but we’d be hard-pressed to handle the growth without Sterling Supply Chain Business Network. With our old system, we would have had to at least double the staff to support this growth.”

FIGURE 5
B2B Transaction Management, Equivalent Team Capacity
(# of B2B transactions per year)



n=9 | Source: IDC, 2020

“Sterling Supply Chain Business Network has significantly streamlined our order delivery process. We now have visibility to answer questions related to order delivery as simple as ‘Did you get this order?’”

Another area where improved visibility into B2B and supply chain transactions, data, and activities with Sterling Supply Chain Business Network has been beneficial to interviewed organizations is in terms of responding to customer and employee issues. Several organizations noted the extent to which Business Transaction Intelligence has enabled their IT teams to respond more readily and correctly to these types of issues. One interviewed organization commented: “Sterling Supply Chain Business Network has significantly streamlined our order delivery process. We now have visibility to answer questions related to order delivery as simple as ‘Did you get this order?’” Overall, interviewed organizations attributed efficiencies of 41% to these teams through their use of Sterling Supply Chain Business Network (see Table 5).

TABLE 5
Support Teams for Business Transactions

	Before/Without Sterling Supply Chain Business Network	With Sterling Supply Chain Business Network	Difference
FTEs per year per organization	8.8	5.2	3.6
Equivalent salary cost per year per organization	\$878,800	\$516,100	\$362,700

n=9 | Source: IDC, 2020

On average, interviewed organizations reported needing 77% less staff time to run and operate B2B integration solutions.

Meanwhile, Sterling Supply Chain Business Network requires significantly less IT time to run and operate than previous B2B integration solutions for their supply chains. Interviewed participants tied these efficiencies to Sterling Supply Chain Business Network’s being a cloud-delivered solution that also provides improved visibility and real-time insights through AI-enabled features such as Business Transaction Intelligence, as well as automation of manual processes related to internal communications and with supply chain partners and customers. One interviewed IBM customer explained: “The IT time needed for maintaining the infrastructure with Sterling Supply Chain Business Network is minimal; it’s nothing, really, in terms of updating and configuring the cloud application, compared with three staff previously required.” On average, interviewed organizations reported needing 77% less staff time with Sterling Supply Chain Business Network, an important efficiency allowing for reallocation of valuable time to other business and IT activities (see Table 6).

TABLE 6
IT Staff Time Required for B2B Platform Operations

	Before/Without Sterling Supply Chain Business Network	With Sterling Supply Chain Business Network	Difference
FTEs per year per organization	2.3	0.5	1.8
Equivalent salary cost per year per organization	\$226,700	\$52,400	\$174,300

n=9 | Source: IDC, 2020

Risk-Related Efficiencies

Supply chain risk, and the ability to be a resilient supply chain, is an increasingly high priority these days. It is time for supply chains to take a structured, proactive stance against risk. Whether it’s the next disease outbreak, the next war, further trade conflicts, climate-change-related weather disruptions, or key business platform outages, supply chain will be affected. Organizations should not only work on alternative plans, though that is a good start; they should also develop the structural capabilities to be a resilient supply chain.

Supply chain platform outages affect study participants’ ability to interact with partners, create and share data across their businesses, and move their products

On average, IDC’s research shows that study participants reduced the impact of unplanned outages affecting their B2B and supply chain activities by an average of 68%.

toward delivery. In turn, interruptions carry a cost not only in terms of lost employee productivity, but also in risk to their overall businesses. Interviewees reported having reduced the impact of unplanned outages affecting their B2B and supply chain activities with Sterling Supply Chain Business Network. On average, IDC’s research shows that study participants reduced the impact of these types of unplanned outages by an average of 68% (see Table 7). For study participants, this means avoiding an average of more than two hours of lost productive time per supply chain user due to unplanned outages affecting supply chain operations.

TABLE 7
Unplanned Downtime

	Before/Without Sterling Supply Chain Business Network	With Sterling Supply Chain Business Network	Difference	% Benefit
MTTR, hours	5.6	3.9	1.7	31%
Lost productive time per supply chain user per year, hours	3.1	1.0	2.1	68%
Value of lost productive time per organization per year, FTEs	5.2	1.7	3.5	68%
Value of lost productive time per organization per year	\$363,500	\$117,700	\$245,800	68%

n=9 | Source: IDC, 2020

Operational Cost Savings

Study participants also explained that deeper visibility into their supply chain and business operations with Sterling Supply Chain Business Network had enabled them to identify and address operational inefficiencies. For example, one organization noted that it can now assess its inventory levels with greater precision, which helps it right-size inventory to its actual business requirements. Another described how it can now use third-party service providers where it previously invested in its own solutions because it knows how to match its operational requirements to third-party capabilities. This customer explained: “We’ve been able to make more use of third-party warehouses because we can just do it via EDI with IBM Sterling Supply Chain Business Network. ... This

“We’ve been able to make more use of third-party warehouses because we can just do it via EDI with IBM Sterling Supply Chain Business Network. ... This means that we don’t have to spin up as many warehouses or install as many products, and we don’t have the capital obligation because we can just partner with a third-party logistics warehouse provider.”

means that we don’t have to spin up as many warehouses or install as many products, and we don’t have the capital obligation because we can just partner with a third-party logistics warehouse provider.” Overall, IDC calculates that study participants will realize operational cost savings related to these types of supply-chain-related improvements as worth an annual average of \$173,200 per organization per year (\$11,800 per 1 million B2B transactions).

ROI Summary

IDC’s analysis of the benefits and costs for interviewed organizations of using IBM Sterling Supply Chain Business Network solutions is presented in Table 8. IDC calculates that these IBM customers will realize discounted benefits worth \$10.76 million per organization (\$736,000 per 1 million B2B transactions) over three years in revenue gains, higher staff productivity and time savings, and operational cost savings. These benefits compare with total discounted three-year investment costs of \$2.47 million per organization (\$169,000 per 1 million B2B transactions), which would result in an average three-year ROI of 335% with payback occurring in an average of 14 months from their initial deployment of Sterling Supply Chain Business Network.

TABLE 8
Three-Year ROI Analysis

	Per Organization	Per 1 Million B2B Transactions
Benefit (discounted)	\$10.76M	\$735,800
Investment (discounted)	\$2.47M	\$169,100
Net present value (NPV)	\$8.29M	\$566,700
Return on investment (ROI)	335%	335%
Payback period	14 months	14 months
Discount rate	12%	12%

n=9 | Source: IDC, 2020

Challenges/Opportunities

For supply chains looking to participate in multi-enterprise supply chain commerce networks—either for the first time or as a complement to existing network participation—IDC offers the following guidance:

- » Multi-enterprise supply chain commerce networks facilitate much-improved visibility, automation, scalability, integration, and performance—enabling businesses to handle significantly higher volume levels while delivering strong supply chain experiences.
- » Look for networks that offer the ability to bring new partners into their business networks faster and with better overall visibility into both B2B transactions and broader supply chain activities.
- » Look for networks that can understand the impact of unplanned outages affecting their B2B and supply chain activities and help to blunt the impacts.
- » Networks enable deeper visibility into the supply chain and business operations to both identify and address operational inefficiencies.
- » Look for networks that can digitize and automate transactions no matter the standard and then repurpose the data exchange to provide insights and better decisions. Be clear about the need for a network. Is it about supporting ecommerce, enabling greater visibility, or managing collaboration/transactions with upstream suppliers or downstream customers?

Lastly, be thinking about the likely future of the supply chain and how multi-enterprise supply chain commerce networks can leverage APIs or micro-applications, integrate with blockchain capabilities and networks, and open up opportunities for multi-enterprise collaboration tools. The impact of a multi-enterprise supply chain commerce network is a balance between what companies need today and what they may need in the future. It is important to understand how networks can improve the supply chain as it exists today, but also to remain mindful of what the longer-term supply chain may evolve into based on changing internal and external business requirements.

Conclusion

As we noted at the outset of this paper, supply chains are under enormous pressure both to be more efficient and effective, and to be able to support new and emerging business models. This is partly about commercializing the

A multi-enterprise supply chain commerce network is a critical and crucial enabler of ecosystems—it's the power of the network that makes the ecosystems go.

potential of new digital technologies like artificial intelligence, but also about understanding core competency and harnessing the power of ecosystems. Navigating key ecosystems will improve the short-term ability to meet product delivery and customer service obligations. It will also position the supply chain to be resilient to disruptions, whether those disruptions are physical in nature or driven by necessary new business models and approaches.

The multi-enterprise supply chain commerce network is a critical and crucial enabler of ecosystems. Point-to-point relationships are simply too low and too limiting—it's the power of the network that makes the ecosystems go.

IDC's research demonstrates the significant value that IBM's customers have achieved by making their supply chains more effective and operationally efficient with the Sterling Supply Chain Business Network platform. They can scale to match escalating B2B transaction volumes with partners, suppliers, and customers, while their businesses benefit from much-improved visibility and performance across their supply chains. As a result, interviewed organizations deliver their goods and services to customers in a robust and timely manner, which leads to higher customer satisfaction, increased supply chain team productivity levels, and ultimately higher revenue.

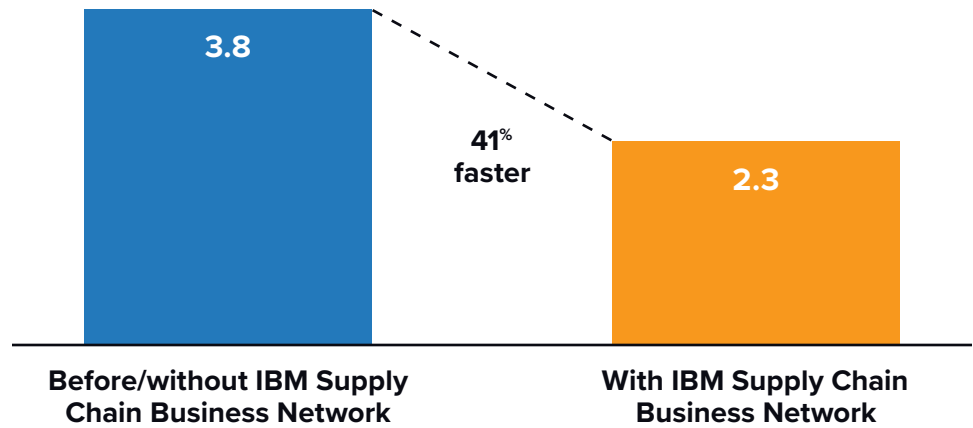
For study participants, these benefits ensure a clear positive return on their investment in IBM Sterling Supply Chain Business Network, with IDC calculating that they will achieve an average of more than \$4 in benefits for every \$1 invested, which translates to an average three-year ROI of 335% for interviewed organizations.

Appendix 1: Additional Tables, Figures, and BTI Interview Quotes

Figure 6 below shows the impact of Sterling Supply Chain Business Network on the time interviewed organizations need on average to onboard a new trading partner, reducing the average time by 41%, meaning that they onboard a typical partner a full 1.5 weeks faster with Sterling Supply Chain Business Network.

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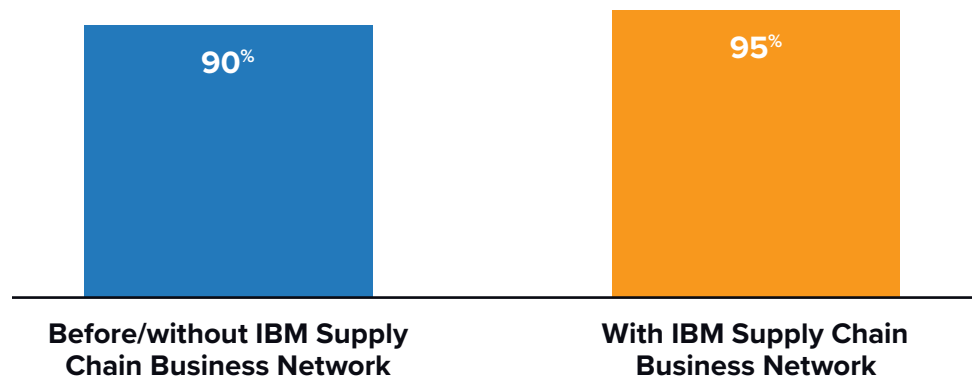
FIGURE 6
Time to Onboard New Partner (# of weeks)



n=9 | Source: IDC, 2020

Figure 7 below shows the impact of Sterling Supply Chain Business Network on interviewed organizations' ability to ensure the timeliness of delivering on their customers' orders, making an important increase from an average of 90% to 95% in terms of timely delivery.

FIGURE 7
Impact on Timely Delivery of Orders
(% of orders delivered on time)



n=9 | Source: IDC, 2020

Additional BTI Interview Quotes

- » **Ease of searching/using transaction records:** “One of the benefits of IBM Business Transaction Intelligence, which is very useful for us, is just a quick way of searching inbound and outbound records. We can do a search on a PO of the database, instead of having to filter out Inflight. Before, if you want to search on an 850 transaction, it has to specify 850, the date range, and then type in the PO number. So it’s more tedious to do it that way instead of BTI just entering POs. Or you can say, ‘Give me all the PO’s for these customers’. It’s more efficient.”
- » **Enables business to efficiently follow up on outstanding invoices, saving 20 hours/month:** “The biggest value we get is on our AR collection side. We have invoices that should have been paid but we hadn’t yet received. . . It lets our business team follow up and say, ‘We sent you the EDI, and here’s everything you need to know about the EDI transaction.’ It gives them the ability to research themselves, rather than have to pull out everything, and then send it to the technical team, and has the technical team pull it all for them. It probably ends up saving us at least 15 minutes a transaction. Depending on the time of season, because when we’re in our peak season we’re getting a lot of orders, it’s going to be more of an impact. It easily saves us 20 hours a month on average.”
- » **Visibility into payments not received:** “With the way IBM Business Transaction Intelligence works, it makes it a lot easier to spot anomalies and things that haven’t been paid for yet. And it gives us better insight into our order-to-cash process.”
- » **Provides more usable data directly, 10% more efficient IT support:** “I am more productive because once you find a search with IBM Business Transaction Intelligence, all the information is presented to you. There’s data you can grab on the page where it’s more descriptive. The page has the item number and the field, whereas we otherwise have to reformat the data to get real data. But in BTI, once you find a search, it will have some texts that are very readable. It’s easy for you to get the information instead of reading the real data.”
- » **Much improved querying speed/capabilities:** “The impact of IBM Business Transaction Intelligence is in the querying factors and the data that comes back is so much quicker and easier than having to dig for it separately.”
- » **Visibility into end-to-end document lifecycles, 3 staff members saving 10% of time:** “The two key things made us look into BTI are the end-to-end document life cycle and the tracking. With IBM SCBN, we can search for the

individual documents, but not necessarily by giving just a PO, and we cannot see what the invoice for that PO is. Whereas in BTI, we can see that end-to-end document lifecycle, and we can track those as well. The advantage of displaying the data in a business friendly format was important to us on the IT side as well for our business users.”

- » **Process efficiencies save AP team time, 50% faster to address pricing conditions:** “Our accounts payable team will be able to use BTI to look up the things that they’re sending to us. From there, they can tell us that something needs to be fixed on the invoice, but they are still able to look it up themselves and that will save them time. They save time from typing up the email, wait for us to respond or have time to look it up ourselves and go from there.”
- » **Freeing up time to focus on other projects:** “With time savings from IBM BTI, we can focus heavily on adding more customers onto EDI, which definitely helps reduce the manual efforts from our business users. We also have time to do projects like research activities in terms of planning an upgrade, or if we want to add additional features to an application.”

Appendix 2: Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of IBM Sterling Supply Chain Business Network solutions as the foundation for the model.

Based on interviews with organizations using Sterling Supply Chain Business Network, IDC performed a three-step process to calculate the ROI and payback period:

- » Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Sterling Supply Chain Business Network. In this study, the benefits included staff productivity gains, higher revenue, and operational cost reductions.
- » Created a complete investment (three-year total cost analysis) profile based on the interviews. Investments go beyond the initial and annual costs of using Sterling Supply Chain Business Network and can include additional costs related to migrations, planning, consulting, and staff or user training.
- » Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Sterling Supply Chain Business Network over a three-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- » Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. IDC has used its standard Business Value assumptions of an average fully loaded \$100,000-per-year salary for IT staff members and an average fully loaded salary of \$70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- » The net present value of the three-year benefits is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- » Further, because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

Message from Sponsor

For more information on IBM Sterling Supply Chain Business Network, please visit: ibm.biz/smarterwithSCBN

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