

WHITE PAPER

Customer Service and Cost Move Logistics Providers and Distributors to Innovate B2B Integration Processes

Sponsored by: Sterling Commerce, an IBM Company

Maureen Fleming
December 2010

IN THIS WHITE PAPER

This paper looks at the trends in logistics and distribution that cause logistics service providers (LSPs), or third-party logistics (3PL) providers, and distributors to reevaluate and revamp their business-to-business (B2B) processes and integration capabilities. In discussions with LSPs and distributors, we have found that B2B process improvement is frequently prompted by a need to provide more consistent customer service and a need to lower costs.

Key to both is focusing on better orchestration of transactions as they are processed by the B2B gateway as well as monitoring, which rapidly identifies transaction-related problems.

This paper also examines how LSPs and distributors are rewriting their B2B processes to support more complex processes and faster cycle times. The paper includes a case study about a Fortune 500 distributor that transformed its enterprise architecture, including its B2B gateway, by focusing on standardizing core processes with strategic products.

SITUATION OVERVIEW

LSPs and distributors are squeezed by their customers as everyone tries to reduce costs while supporting new customer requirements. In interviewing manufacturers and retailers about changes to their B2B processes, we found a strong emphasis on increasing the speed and visibility of key processes, including supporting faster supply chain logistics processes, multichannel integration with order management, and better inventory optimization in which 3PL providers and distributors play a large role.

These changes place a premium on the ability of all members of the supply chain to be situationally aware of their own performance as well as being able to adapt to changes in supply and demand that ripple throughout the chain. Due to the very tight margins typical in distribution and logistics, LSPs and distributors need to ensure that they minimize any mistake that can occur that decreases profits even as customer demands for faster speeds and more complexity increase the probability of mistakes.

According to IDC Manufacturing Insights, LSPs and distributors, operating as part of a supply chain, will increasingly focus on improving their core processes as the latest step in a continuing drive toward greater leanness and adaptability. Applying real-time

or near-real-time intelligence to core processes will help improve responsiveness by rapidly identifying problems. This improves the ability of LSPs and distributors to operate more dynamically while also better managing costs.

Key areas of process improvement attention include:

- ☒ **Evolution from a fixed cost-driven supply network to a variable cost-driven value network.** The modernization of the supply chain will continue, allowing LSPs and distributors to understand past, present, and future performance. Companies will increasingly seek to optimize capabilities to fulfill globally and take a unified view of production, logistics, and trade execution. Operating models will favor a capabilities view rather than a resource view and will manage based on more variable, rather than fixed, costs. This evolution is about not only getting current with best practices but also developing fundamentally different capabilities (strategic outsourcing, shared capacity, collaborative innovation).

- ☒ **Creation of intelligent fulfillment capabilities network.** The modern fulfillment capabilities network will be instrumented to support accurate, complete, and timely data acquisition. This requirement will move well beyond transactional reporting or sensor data going into some temporal data historian. Rather, continuous data acquisition will benefit from interpretation at the edge and will support tracking schedule, quality, cost, asset, and product information.

Evolving to support and respond to intelligence-driven initiatives both upstream and downstream requires investments in automation. Core to automation is the integration required to unify and manage processes that span the supply chain. This process is already complex, but it will become more complex as LSPs and distributors support more dynamic and faster business cycles with supply chain partners that span multiple geographies and channels.

Process Efficiency and Cost Control

Cost control is a strong theme in interviews with LSPs and distributors. A cornerstone of cost control is process efficiency. Two important ways to improve efficiency are by reducing the variability of a process and by preventing mistakes.

Reducing Variability

Integration can be implemented through point-to-point mechanisms, where each integration job is treated as a standalone capability or by developing a common framework with components that can be applied to each new integration request. The first approach tends to increase process variability, while the latter reduces it. The former approach typically increases the length of time required to make changes, which increases costs. Overall, the point-to-point approach may be logically simpler to implement the first time, but in the long run, it decreases responsiveness.

In transforming its B2B process, a book distributor examined its B2B integration process and identified tasks and orchestrations that could be standardized. It then created a modularized approach that standardized the process of sending or receiving partner documents, regardless of transaction type. For example, the team

created one job that polls the back-office system to look for outgoing files, regardless of document type and trading partner. In addition, it created a task that checks for the types of file by prefix and then, based on the prefix, executes the workflow aligned with that prefix type.

When the team onboards new trading partners and new transaction types or makes changes, it focuses on the net-new capabilities. As a result, the distributor's cycle times for customer onboarding and change management are significantly faster. Since the change, the team is able to onboard a new customer, when needed, in hours rather than weeks. The team is also able to handle the faster cycles and increased change management work without any increase in headcount.

This book distributor, in essence, created a center of stability in a highly complex and volatile business setting. This was a common theme across the enterprises interviewed for the study.

This same effort was true for a large industrial supplies distributor. The company, as a whole, reevaluated its enterprise architecture and identified and standardized its core processes. The B2B team used the same approach to identify and standardize its core processes.

Using this approach, it was able to implement real-time monitoring and troubleshooting as well as decrease processing cycle times. Similar to the book distributor, this company was also able to onboard much more quickly.

Preventing Mistakes

The further a transaction containing mistakes is brought into applications, the more problematic and expensive it is to solve the resulting problems. In discussions with LSPs that reengineered their B2B processes, we found a significant focus on identifying and preventing mistakes as a core B2B integration activity.

LSPs operate on razor-thin margins and provide service to many customers. Nonasset-based logistics providers also broker or arrange carrier services on behalf of a large number of their shipper clients. Under these circumstances, there is an opportunity for many types of mistakes to occur, and as a result, the providers are constantly at risk of not being profitable.

While a common mistake might be transmission of an incorrectly formatted document or a data entry error for a manual order, loading out-of-order transactions into an enterprise application such as an ERP also creates mistakes. This type of problem occurs when customers send their LSP a file containing consolidated EDI data covering several document types, including orders, changes, and cancellations. Records related to the same order may be sent in any order within the same consolidated file.

Without a FIFO process to identify documents related to the same order and then reorder by time and date, an LSP could dispatch a carrier to pick up and deliver an order when the order has already been cancelled.

Preventing this type of mistake is a major concern to the LSPs interviewed in this study. Several features of a modern B2B gateway are useful to orchestrate FIFO reordering. Enterprises we spoke with use the mailbox facility as a persistent queuing mechanism. As a file is decomposed into records, the records are sent to the appropriate mailbox. Documents are correlated with each other and organized by time. The order, order change, and cancellation sequences are placed in the correct time order prior to being sent to the ERP application. Correctly sequencing the records prior to processing them in the ERP prevents mistakes.

FIFO is not the only mistake solved with a B2B gateway. Over the past several years, we have seen a much more significant effort by enterprises to solve data quality problems as part of the integration process.

We also have found that customers are using the mailbox component of a B2B gateway to hold, or queue, documents that will be amended or appended in some way prior to delivery. The mailboxes are also used to decompose files and orchestrate and transform the resulting records to prepare them for receipt by the target systems.

Other software products are capable of handling records orchestration, but because enterprises in this study have such a wide range of heterogeneity and sizes to deal with — from very large files to small messages — they find it is more efficient to standardize on one product and fully use its capabilities for all similar types of integration inside and outside their organization.

Whether initiatives are driven from the top down to focus on improved intelligence and a more efficient and faster flow of data within a business network or from the bottom up through the adoption of technology to decrease the cost and improve the reliability of transactions to and from partners, the result is a strategic need to improve integration-dependent processes.

Large Distributor Challenged with Driving Down the Cost of Core Processes

Note: IDC's typical approach for case studies is to name the specific customer, but this customer has requested anonymity due to the strategic nature of its story.

The top executives of a Fortune 500 United States-based industrial supplies distributor realized they needed to systematically decrease the costs of their core processes. The distributor sells thousands of products to customers, and some of the items are priced so low that the cost of selling and delivering an item may exceed the cost of the item itself. The executives also wanted to minimize the cost of purchasing items for their customers.

In the mid-2000s, management decided that a wide-ranging change to the distributor's enterprise architecture was required to improve its internal and customer-facing processes. The new architecture would be based on:

- A platform of common processes
- Consistent customer experience

- Process-oriented business architecture
- Standardized configurable menu of services
- Single source of truth for all information
- Complete and accurate design transactions

B2B Integration Transformation Tied to New Enterprise Architecture

A decision was made to migrate most of the internal applications to SAP, which kicked off a three-year application migration and standardization project. Because so much of the data managed by SAP applications comes from trading partners and customers, the architecture team also decided to standardize its B2B gateway to drive down the costs and speed up cycle times of all of the customer and partner integration processes. Already a Sterling Commerce customer, the company decided to upgrade to IBM Sterling B2B Integrator.

We spoke with the lead developer and architect of the integration team for this case study, which focuses on how the B2B team transformed the distributor's B2B integration processes.

Implementation Involves Shifting from Point-to-Point to Standardized Processes

The B2B technical team, with a full-time staff of five, developed a business process framework as part of the standardization effort. The framework includes 10 core processes. Every transaction processed through Sterling B2B Integrator goes through those same 10 processes.

The developers also created a set of core generically written communication processes that support FTP, SFTP, HTTP, and file systems. This gives the distributor a standard approach to adding a partner regardless of transaction type and regardless of whether the data is formatted in EDI, XML, or flat file.

Part of the design of the business process framework included a requirement to monitor all transactions flowing through the B2B gateway. The team created a table used to stage all data prior to sending. The communications processes interact with the staging table to collect data used for monitoring. From there, data is pushed through the 10 core generic processes, which include:

- Determining how to batch the data prior to sending
- Controlling the number of documents that are delivered as a batch
- Scheduling and controlling the frequency of delivery

The team is able to measure and monitor everything that comes through Sterling B2B Integrator because each transaction is run through the set of core processes. This is critical because the B2B team needs to monitor and manage connections and connection failures across all of its trading partners across all of the different connection points.

With the new, standardized approach to B2B integration, the distributor has a B2B team consisting of technical experts and analysts. The technical team is responsible for all of the process development, including development of the orchestration capabilities using BPML, the native development language and modeling environment from Sterling Commerce. The team also writes new processes and Web applications and enhances processes that come bundled with Sterling B2B Integrator when there is a need to customize them or boost performance. In addition, the technical team creates all of the communications processes that connect to the company's partners.

Six analysts are responsible for working directly with customers to develop the map objects that are used to transform data that is exchanged with the company's customers. They create the transaction maps for each partner and the inbound and outbound routing associated with each transaction. In production, Sterling B2B Integrator triggers the correct routing associated with the transaction.

The distributor has roughly 6,000 partners and customers and roughly 225 transaction types.

B2B Extends to Internal and Business Service Partner Integration

Because Sterling B2B Integrator is the standard gateway for the distributor, receiving files and transforming and preparing transactions for receipt by SAP, the team has to support all types of transactions coming from trading partners. One change since the company moved to a standardized model is the support of suppliers that provide business services, such as banks and providers of human resource services.

The B2B team is also responsible for intercompany communications requiring integration, particularly where an employee needs to manually upload data or an ad hoc report. They are uploaded to designated mailboxes and from there are routed to the appropriate destination, both inside and outside the company. Because the distributor operates out of different locations geographically, the team also manages the automated exchange of data between locations via the B2B gateway mailbox or direct file transfer over SFTP.

Focus on SLAs Leads Team to Customize Sterling B2B Integrator Processes

Process improvement is an important area of focus for the B2B team because it is aware that processing transactions for delivery to SAP is part of larger end-to-end processes. In one case, the company wanted to begin processing orders from an ecommerce application from one of its subsidiaries to the IBM Sterling B2B Gateway. Management assigned 30 minutes to the integration leg of the process to prepare the purchase orders for loading to SAP.

The team realized that these transactions, which would be delivered in batch files, would be processed during peak load and that not all of the transactions would be processed in time to meet the service-level agreement (SLA). While its SLA was 30 minutes, the team realized it would take 90 minutes to process all of the orders.

The team made a decision to write a new service that would automatically invoke multiple processes at once, in essence, parallelizing the processing of transactions and removing looping, which significantly slowed down the processing speed. With this change, it was able to reduce the total throughput time from 90 minutes to 20 minutes.

Results

Standardizing and removing process variability are critical to providing consistent and reliable service to customers. These efforts also reduce costs.

This publicly traded distributor transformed its enterprise architecture in a profound way, including:

- ☒ Selecting and standardizing on strategic vendors and products and building core teams to support them
- ☒ Improving the consistency of its customer service
- ☒ Monitoring processes to identify problems with transactions
- ☒ Investing in change where needed to adhere to process cycle times

The efforts have paid off. Since the company began this changeover, it has achieved improvements in its gross margin each year since 2005 and its operating margin improved each year through 2008. In 2009, with the recession, there was only a modest dip in operating margin performance.

That kind of financial control in a company as large as this distributor is extremely challenging without a strong enterprise architecture in place. For its part, management has recognized the role that process improvement has played in improving the financial performance of the company.

Looking at the company's B2B integration transformation, the team is knowledgeable about its relationship to a larger set of processes. It built the system to support monitoring and troubleshooting, which provides the insight required to improve process performance when required. In addition, it has the resources and skills to make underlying changes to process template functionality to refine and improve the performance.

ESSENTIAL GUIDANCE

Improving B2B processes is an important step in enabling the changes required to compete in the new intelligent economy. Efforts should be under way to improve the adaptability of B2B processes, and design should also involve problem tracking and visibility.

In discussions with LSPs and distributors that successfully went through B2B reengineering, we found a broad understanding that it was critical to take a process-centric approach to B2B integration. This required a new set of skills to learn how to

convert integration from a point-to-point activity to a reusable process. Making this shift allowed distributors and LSPs to respond quickly and cost-effectively to new requests to onboard and to reduce processing cycle times.

Another skill is the adoption of a processing language that implements orchestration and allows reusable process components to be developed.

FUTURE OUTLOOK

Given the gap between the needs of the new intelligent economy and the underlying capabilities of distributors and LSPs to respond dynamically and cost-effectively, implementing smarter processes, products, plants, people, and partners will take time. However, we are seeing that companies that are beginning to adapt by reengineering externally driven processes are able to differentiate themselves by their ability to meet the changing needs of their customers. A core part of reengineering also involves the ability to adapt cost-effectively.

We believe that logistics providers and distributors that have embarked on this journey as a form of innovation will gain ground as their clients view them as critical information supply chain partners. They will compare more favorably than competitors that view B2B integration as a tactical, back-office function.

Copyright Notice

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2010 IDC. Reproduction without written permission is completely forbidden.