

WHITE PAPER

As Retailers Move to "Endless Hours" While Controlling Costs, B2B Integration Becomes Critical

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IN THIS WHITE PAPER

This white paper looks at trends in the retail sector that are creating a need for businesses to reexamine their business processes supporting both business-to-business (B2B) and application-to-application integration.

Retailers are competing to gain market share by diversifying, selling through stores online and mobile presence, and extending the assortment of products they offer to consumers. They are also focused on minimizing costs. All of these factors make traditionally complex retail operations even more complicated.

To mitigate the natural increase in cost caused by increases in complexity and to improve reliability, retailers are evolving to real-time infrastructure, particularly in their supply chains. They are also reexamining their existing B2B platforms to increase responsiveness, embedding B2B-centric integration into core applications, and looking for common infrastructure to handle B2B and application-to-application integration.

This white paper also includes a case study of a retailer undergoing major transitions around increasing complexity, real-time systems, and the growing use of integration as core enabling infrastructure.

SITUATION OVERVIEW

The profile of the average consumer in a retail environment changed following the near collapse of the economy. With increasing frequency, consumers use the Internet to compare products and make rational value judgments before deciding to make a purchase. In addition, consumers expect to be able to purchase and receive orders wherever they want, whenever they want.

As the global economy has started to recover, retailers have realized that they have to take a stronger customer-centric approach to business and technology initiatives. According to IDC's *2010 Retail Supply Chain Survey*, improving product quality is the number 1 retail supply chain initiative among vendors of all sizes and in all segments of the retail industry.

Retailers listed "increasing sales volume" as their number 2 priority. To increase sales volume, businesses will execute fulfillment processes across multiple channels in order to reach as many potential customers as possible. To meet these demands and

remain competitive, retail businesses face several challenges associated with growth, including the ability to:

- ☒ Provide an expanded assortment of products for customers to choose from
- ☒ Make this assortment available across multiple sales channels
- ☒ Ensure that all products in the assortment are available for delivery through these channels at all times

According to IDC Retail Insights, retailers will also focus on changes to their IT infrastructure and supply chain, including:

- ☒ **Launching aggressive technology investment programs to support new business models while decreasing traditional IT costs.** Technology has become more than a tool for operating a retail organization more efficiently; it has become a centerpiece of growth strategies. Supporting multiple channels requires a strong demand intelligence foundation, versatile manufacturing, and efficient fulfillment. Over the next few years, retailers that are looking to get a jump on new industry realities will begin aggressive investment programs to put the necessary automation, decision support, and customer interactions in place.
- ☒ **Extracting more from their supply chains in order to respond to customer, supplier, and regulatory influences.** Optimized and automated business processes and retail product life-cycle management will continue to be the retailer's secret ingredients to fast return on technology investments in the supply chain while satisfying immediate tactical requirements, including improved order management, supply visibility, shorter cycle times, and compliance.
- ☒ **Investing in demand intelligence and visibility, driven by a need to lower inventory costs and be more customer centric.** Analytics, powered by business and demand intelligence platforms, will power inventory reductions, inform pricing decisions, and define successful promotion and markdown programs. Intelligence also underpins loss prevention/shrink reduction and supply chain applications.

Improving Process Responsiveness by Expanding Role of Integration Infrastructure

Retailers live in two different worlds. They have an internal world and an external world, and both require a tremendous amount of integration. In the internal world, there is connectivity with all of a retailer's channels and with distribution centers, along with a focus on cross-channel execution. For example, a retailer must have full understanding of where inventory is to be able to promise that inventory to a consumer, whether it be on the Web or in the call center.

In the external world, working with partners and suppliers, including banks, requires a retailer to connect outside its perimeter or within its supply chain. Because of the expansion of channels to include mobile and online, retailers and their supply chains have to support "endless hours" and a much broader assortment of products online to grow and gain market share. Online doesn't have the capacity constraints of a store,

and customers can make a purchase and have the order shipped directly to their home or to the closest store.

Being able to integrate the outside world with the inside world is becoming more and more important to a retailer's success. While retailers tend to mandate how their supply chains interact with them, which greatly simplifies communications, they are finding that their internal application-to-application interactions are much more varied and complex. We are finding that retailers are improving their inside world communications by leveraging their traditional outside world technology.

In discussions with retailers about their evolving use of B2B integration technology, we are finding similarities:

- Leverage of B2B integration technology for application-to-application integration
- Use of B2B integration to achieve visibility and flexibility with real-time, event-driven integration
- Embedding B2B integration into the application development process

Leverage B2B Integration Technology for Application-to-Application Integration

To mitigate the expense of an expanded assortment of suppliers and products, retailers have been intent on improving profit margins by reducing expenses. Instead of investing in new integration technology, many businesses are choosing to push the capabilities of their B2B technology investments into their internal environments. Increasingly, B2B technology suites are becoming hubs with the potential to fulfill both internal and external integration needs.

Recently, a major U.S. apparel retailer tied together all of its ecommerce systems by leveraging its B2B integration platform. The company's interactions with its Web sites, call centers, order management, warehouses, and connections with third-party external services are all processed by its B2B hub. This initiative made it less expensive and faster for the retailer to deploy new interfaces while also increasing the security and scalability of the company's ecommerce operations.

A large discount home goods retailer opted to begin using its B2B integration platform as an internal integration hub for real-time, message-oriented translations instead of investing in an enterprise service bus (ESB). The decision was based on a mandate from management to fully leverage existing IT investments and purchase only technology that has net-new functionality. Ultimately, the retailer improved interoperability among trading partners, third-party services partners, and the retailer's own systems by standardizing all touch points on one platform.

Achieve Visibility and Flexibility with Real-Time, Event-Driven Integration

Many retailers are speeding up their cycles around visibility by focusing on becoming more situationally aware. By identifying exceptions in near real time, retailers are able to respond more dynamically to changes in demand, both lowering costs and improving customer service.

One large home improvement retailer moved to real-time, event-driven architecture when its IT group realized that in order to build a dashboard to manage and automate its process around tracking trucks, it would have to move from a batch-oriented to a real-time architecture. Now, it monitors central processing cycles that run every 15 minutes as opposed to every 6 hours. This has expedited the process behind identifying exceptions and taking action to recover from them.

This retailer has also benefited because it has been able to manage a leaner inventory. By keeping safety inventory at a minimum, the large retailer has been able to cut overhead costs and at the same time improve its fulfillment process.

Embed Integration into Application Development

In discussions with retailers and their supply chains, we are finding a much greater realization of the importance of integration to process improvement. Traditionally, process improvement meant implementing a new packaged or custom application or embarking on a major application upgrade.

Today, there is more discussion about where the greatest business value is. Is it in changing the internal tasks and activities associated with a single process, or is it in improving how internal and external processes interoperate with each to achieve a desired result?

Supply chain visibility is an example. Each participant in the supply chain manages its own set of internal processes. And each participant is dependent upon every other participant for end-to-end process excellence. That requires the ability to communicate problems to members of the supply chain and to keep them accountable.

Visibility, in this case, is an application of supply chain integration.

Order management is another example. Many retailers are reexamining their order management capabilities because of a need to seamlessly support all of their channels. This is increasingly complex. To improve order management, retailers have to focus on both order management and integration to achieve cross-channel interoperability.

This issue is so important to one retailer that it is retraining its entire development and testing organization to develop applications that handle both the business process executed by the application and the interoperability processes executed by the integration hub.

By integrating internal application systems, businesses are investing in automation and supply chain visibility through a focus on B2B integration. Converting to real-time, event-driven architecture has become a priority for many retailers, especially those with high-volume, low cycle time requirements. These initiatives have helped retailers minimize safety inventory to cut down on overhead expenses, as well as increase the amount of recovery time they have to respond to exceptions.

Discount Retailer Case Study

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.

A discount retailer with several thousand stores and several warehouses across the United States focuses on providing good value for the money to families on a budget, selling a mix of products including consumables, apparel and accessories, home products, electronics, and seasonal items.

Despite the poor economy, the retailer grew revenue in both 2009 and through the first half of 2010. Despite the fact that the company operates on a razor-thin margin, and despite last year's poor economic climate, the company experienced strong double-digit growth in profitability. Its B2B operations manage more than 1,500 vendors. For the past several years, all of the company's core transactions have been exchanged electronically with these vendors.

When vendors sign up, they have to be onboarded before the retailer sends them orders. A separate team within the business unit manages the onboarding process. Offshore contractors handle the onboard coding and business process development and support.

The company has a single team handling design, development, implementation, and operations of its integration processes. Two full-time employees within the IT organization have responsibility for IBM Sterling B2B Integrator. A number of contractors, both domestic and offshore, are available for different integration projects, putting the total headcount between six and eight.

Focus on Leverage Expands Use of Sterling B2B Integrator

Until 2008, Sterling B2B Integrator was used for classic B2B, exchanging EDI documents with the company's trading partners. Two years ago, there was a decision to think about integration more architecturally and see how far the retailer could extend Sterling B2B Integrator to handle application-to-application integration.

The motivation behind this decision stemmed from a CIO mandate to better leverage the company's existing software investments. The retailer's profitability depends on controlling costs and providing value to customers by offering the best possible alternatives in the market. In the IT organization, one way to control costs is to leverage existing software to solve a broader spectrum of problems.

Increasing Adoption of Real-Time Integration

When the decision was made to broaden the use of Sterling B2B Integrator, the initial projects involved exchanging files between applications in batches. But in 2009 the team began receiving requests for more real-time integration. While the team considered purchasing an ESB, it decided to see how far it could go leveraging Sterling B2B Integrator, using its native Web services capabilities.

The initial real-time requests were aligned with the need for better information about inventory. Stores needed to know in real time whether inventory was in the store or

warehouse or on the truck. This required event-driven integration with back-end systems.

For applications involving real-time integration, the Sterling B2B Integrator team shifted to an event-driven update model. Changes to an application's data trigger the firing of an event to Sterling B2B Integrator, where the message is processed and forwarded to target applications. There is no longer any need to poll to find changed data or to schedule an update.

With some of its real-time processes, the retailer has been able to reduce the amount of manual keying, freeing up resources for higher-value work. One process it focused on was moving information automatically between the transportation application and routing application, shifting away from manual entry. Another process involved automating applications when a truck was received by a store.

The volume of data integrated using Sterling B2B Integrator has grown exponentially in the past 12 to 18 months because there is now EDI, file transfer, and application integration traffic. Increasing the utilization of Sterling B2B Integrator has been so prevalent that the development and operations staff has grown substantially over the past two years from 2.5 full-time employees to six to eight full-time employees.

A comparison of traffic processed through Sterling B2B Integrator currently reveals that more than 85% of the retailer's partners are exchanging EDI documents, but more than 80% of the 50GB to 60GB of data exchanged weekly through Sterling B2B Integrator involves application-to-application integration, covering both internal applications and the exchange of data with the company's application service providers.

Given the fact that the retailer experienced double-digit growth in profitability during one of the worst recessions in U.S. history, it is clear that the company's strategy of leveraging and gaining greater performance from existing investments and automating manual work has paid significant dividends.

Tying Integration Functionality with Applications Requires Developer Process Change

In order to accelerate the leverage of Sterling B2B Integrator inside the retailer, a training effort is under way across the company's 100+ application developers and testers to ensure that everyone is aware of and knows how to handle integration using Sterling B2B Integrator as part of the application development process.

Many of the applications operated by the retailer or by the company's application service providers need to interoperate with each other, which requires integration. Traditionally, developers decided individually how to handle data interoperability and typically used familiar proprietary standards. The developers are very efficient because they've developed skills and their own approach to solving different development problems. But from a maintenance and operating cost perspective, the retailer believes there is a better cost model in the use of standards-based infrastructure.

Moving to standards makes it easier to manage changes to an application, particularly when the developer is no longer working at the retailer. For integration, problems are alleviated when interfaces are standardized and the integration is built on a common architecture. The new developer trained on the standard approach does not have to learn the previous developer's coding process around integration.

Similar to other companies taking an architectural approach to integration, this retailer also expects that a standardized approach will increase the leverage and reusability of common steps within an integration process. This type of leverage reduces development cycle times.

Upgrade to Sterling B2B Integrator 5.0

As of August 2010, the retailer was in the process of upgrading from Sterling B2B Integrator 4.3 to 5.0 as part of an overall upgrade to the system's architecture. The retailer is shifting from a higher-cost database to a lower-cost database and replacing the hardware platform with commodity Linux servers running 64-bit software.

This change was prompted by the need to cost-effectively improve the scalability of the Sterling B2B Integrator infrastructure, which processes exponentially larger volumes of data. The retailer anticipates further increases in growth as it begins to standardize its file transfer processes as well.

Integration Hub an Important Element of Architecture

The retailer was an early adopter of Sterling B2B Integrator. As the B2B team became more knowledgeable about the software, it evolved its scope, moving from EDI transactions to batch-oriented application integration to real-time, event-driven integration. In essence, Sterling B2B Integrator has become the company's integration hub.

As with many other organizations, connectivity and integration are becoming much more important to the retailer as it manages the complexity of interoperability with trading partners, off-premise application service partners, and on-premise application-to-application integration. The benefit of this complexity is cost-effective, improved cycle times.

As an early adopter, the B2B team went through a learning curve. As use of Sterling B2B Integrator extends to the broader group of developers and testers, they are also going through a learning curve. But they are finding that overcoming this learning curve has brought them benefits. Standardizing the approach to integration will continue to achieve multiple benefits:

- ☒ Streamlined and cost-effective integration processes
- ☒ Reduced development cycle times and improved quality through reusability
- ☒ Lower operating costs by removing manual tasks
- ☒ A greater focus in the business and in development on higher value-added work

ESSENTIAL GUIDANCE

As retailers expand across channels, increase their mix of products, reduce their costs, and drive improved performance through their supply chains, they will be heavily dependent on automation of the interactions supporting these initiatives. Because these initiatives are focused so much on external processes and external communications, business-to-business integration plays a critical role.

We believe that retailers that embrace and innovate around integration will be able to improve cycle times much more easily than retailers that view B2B integration as simply a way to handle EDI-based transactions.

- ☒ Expect more non-EDI traffic to be processed on your B2B gateway.
- ☒ The demand for visibility and applications of visibility will increase, not lessen, with the improving economy. Expect more complexity, more speed, and more demand for an end-to-end view of a process involving both the supply chain and customers. If your current approach to B2B integration cannot handle end-to-end visibility, you will need to begin the process of upgrading your capabilities.

FUTURE OUTLOOK

Location has always been critical for retailers. Locations are become increasingly virtual, not only from a channels perspective but also from the perspective of where process automation is located.

Retailers will face many challenges in reorganizing and supporting an increasingly complex mix of technology-enabled systems required to meet customer demands while also holding the line on costs. The operations and IT teams of successful retailers will inevitably have a growing focus on removing the barriers caused by differences in locations. B2B integration will continue to be a key enabler.

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