

## Global Retailer: SOA, TIBCO, BI

### ORGANIZATION

The client is a leading global shoe retailer with over 4,800 stores across North and South America. To complement its brick-and-mortar stores, the company previously launched an online portal to enhance its revenue streams. Customers could place orders on the eCommerce platform, with the option to either have products shipped to a nearby store for pickup or directly to their homes via carriers such as UPS, USPS, or APO/FPO. In parallel, the client was establishing a new Distribution Center (DC) to handle fulfillment for online orders, ensuring optimized order processing and delivery.

### CHALLENGE

With the growth of the online store and the launch of the new Distribution Center (DC), the client faced several operational challenges. The primary business requirement was to streamline the eCommerce order fulfillment process by routing orders to the newly established DC, specifically designated for online order processing. Additionally, as the company's operations evolved, the business anticipated a dynamic fulfillment scenario with multiple Distribution Centers (DCs) and a shifting operational structure.

#### Future Business Scenarios Included:

- **Fulfillment from both DCs:** Managing eCommerce orders from multiple DCs to increase operational flexibility and scalability.
- **Decentralized E-Commerce Fulfillment:** Separating e-commerce fulfillment operations across various DCs as needed.
- **Adaptable and Scalable Integration:** A robust solution that could easily evolve without disruption, ensuring seamless adaptation to future business needs.

The challenge, therefore, was to implement a scalable and flexible integration solution that could seamlessly handle the growing complexity of eCommerce order fulfillment while also adapting to evolving business strategies without causing operational disruptions.

### TECHNICAL LANDSCAPE

The client's technical environment included a diverse and complex set of platforms requiring careful integration:

- **Data Flow:** eCommerce portal data was transmitted daily to the mainframe-based inventory management system.
- **Warehouse Management System (WMS):** Two WMS instances, one for each of the DCs, handled order fulfillment tasks.
- **Data Transfer Methods:** A lack of standardized integration patterns led to reliance on CSV file-based data transfers, which were inefficient and error-prone.
- **Mainframe Data Extraction Issues:** Timeliness, completeness, and accuracy of data extraction were major concerns.
- **Technology Compatibility:** The integration solution needed to work across varied platforms, including mainframes, AS-400 systems, and modern client-server technologies.
- **Real-Time Operations:** The system required near real-time data transfer for rapid fulfillment of eCommerce orders from the moment the order was placed.

### TECHNICAL SOLUTION

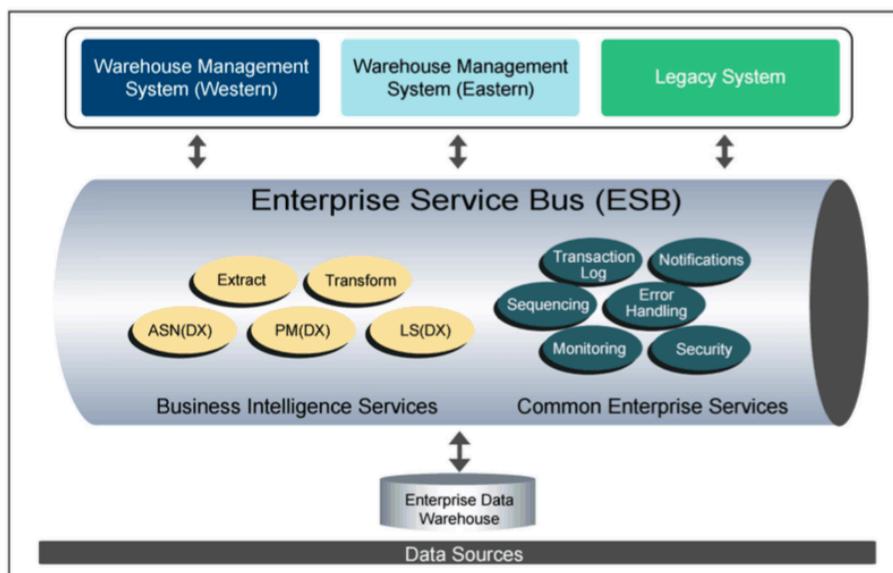
XTIVIA designed and implemented a near real-time integration solution using TIBCO™ technologies, leveraging industry best practices in Service-Oriented Architecture (SOA), Business Intelligence (BI), and Integration. The solution was engineered to meet the business requirements while enabling seamless scalability and adaptability for future needs.

**Key Features of the Solution:**

- **VEST Approach:** XTIVIA used a VEST (Validation, Enrichment, Standardization, and Transformation) methodology to address the complex data integration needs, ensuring the accuracy, consistency, and usability of data across platforms.
- **Reusable Service Components:** To maximize efficiency, XTIVIA created reusable BusinessWorks (BW) templates, enabling rapid deployment of individual integration interfaces.
- **SOA-Based Architecture:** The solution adhered to pure SOA principles, building common services such as Notification, Exception Handling, Transaction Logging, and Auditing. These were leveraged across multiple enterprise applications, ensuring consistency and reducing development time.
- **Enterprise Messaging Backbone:** The solution utilized TIBCO EMS as the central messaging framework, ensuring seamless communication between all services and applications.
- **Scalability and Extensibility:** The integration was designed with a common data model that facilitated future integrations with other enterprise applications, ensuring the system could easily accommodate future growth.

**Specific Interfaces Delivered:**

- **Pick Ticket Interface:** This interface routed eCommerce orders to the Warehouse Management System (WMS), enabling operators to efficiently pick items from the warehouse for customer fulfillment.
- **Trailer Close Interface:** This interface provided feedback to the mainframe inventory system, updating the system with the status of fulfilled orders and whether they were delivered to a store for pickup or shipped directly to the customer.
- **Zero Picks Interface:** This interface kept the mainframe inventory system in sync with the DC’s order status, flagging orders that could not be shipped on the same day and ensuring accurate and up-to-date order tracking.



## BUSINESS RESULT

The integration solution delivered significant business value by optimizing eCommerce order fulfillment and providing the necessary scalability to meet future demand:

- **Reduced Fulfillment Time:** Order processing times were significantly reduced, improving the speed at which customers received their orders.
- **Enhanced Efficiency:** The solution increased the efficiency of eCommerce order fulfillment, reducing manual intervention and operational errors.
- **In-Store Pickup Integration:** The system enabled more streamlined packing and delivery, allowing in-store eCommerce orders to be consolidated with regular store shipments from the DC.
- **Real-Time Visibility:** Users gained real-time insights into the fulfillment status of all eCommerce orders, improving transparency and customer experience.
- **Scalability:** The solution was designed to handle future increases in eCommerce order volumes without requiring substantial rework or system upgrades, ensuring long-term viability.

## KEYWORDS

*eCommerce Integration, Order Fulfillment Automation, Distribution Center (DC) Integration, Warehouse Management System (WMS), TIBCO™ BusinessWorks, TIBCO EMS, Service-Oriented Architecture (SOA), Mainframe Integration, Real-Time Order Processing, Data Transformation and Standardization, Scalable Integration Solution, Retail Supply Chain Optimization, Business Intelligence (BI) Integration, CSV Data Transfer Optimization, Zero Picks Management, Order Tracking System*

## SOFTWARE

*TIBCO™ BusinessWorks TIBCO DataExchange TIBCO Rendezvous TIBCO EMS TIBCO Object Star Adapter for Files (z/OS) Adapter for Files (UNIX)*

## ABOUT XTIVIA

At XTIVIA, we've been providing IT solutions and consulting services for over 30 years with a wide range of services, including technology assessments, IT service and asset management, software development, data analytics, cloud migration, DevSecOps, ERP, and enterprise content management. Dedicated to each discipline, ensuring that our clients receive the best possible service. Through strategic acquisitions, we've acquired talented people who are experts in their industries, passionate about what they do, and committed to providing exceptional service to our clients. Whether you need to improve your IT infrastructure or implement new software solutions, XTIVIA is here to help you achieve your business goals. XTIVIA has offices in Colorado, New York, New Jersey, Texas, Virginia, and India. [www.xtivia.com](http://www.xtivia.com)