

Optimizing EDI Performance for Microsoft Dynamics AX 2009

Common problems and solutions associated with EDI and how vSync's approach improves EDI performance for customers



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Executive Summary

In the market today, EDI vendors are commonly generalists, in that they deploy their applications and services across multiple ERP solutions using a “universal adapter.” It has been vSync’s position in designing its solutions that the integration to the business system and its resulting workflow for mid-market companies is crucial to realizing ROI and is of significant value. This design strategy must start with a deep understanding of the ERP platform itself.

When designing our EDI solution for Microsoft Dynamics AX, vSync deliberately sought design objectives that solved several key business issues for EDI customers using Microsoft Dynamics AX:

- Improved ability to manage EDI transactions as part of an employee’s workflow
- Improved data integrity
- Improved EDI processing speeds for high-volume users
- Reduced implementation costs

To achieve the results required for demanding supply chain environments, vSync took the innovative approach of designing our EDI solution within AX’s AOT foundation (Application Object Tables) utilizing both Morphx and X++. Additionally, our solution uses AIF’s Axd document classes for integration, and the .NET Business Connector, to break through performance barriers and achieve best of class results for users and partners that support the AX application.

This white paper will explain our approach and findings in developing our integrated EDI solution for Microsoft Dynamics AX 2009, and describes how our integration strategy addresses common EDI problems faced by Microsoft Dynamics AX users.

Research, Training, and Initial Design Considerations

vSync's EDI solution was built specifically for Microsoft Dynamics AX 2009. This process took over 20 months which involved significant research and training on the Dynamics AX product line, and included product management and technical resources from Microsoft. At the heart of this approach was the belief that for vSync to deliver a solution that optimized workflow processes and filled gaps in sales order and fulfillment processes, our approach required a deep understanding of Microsoft Dynamics AX.

It is a methodology that is at the core of vSync's embedded and widely-adopted EDI solution for Microsoft Dynamics GP. Given the robust distribution capabilities of Microsoft Dynamics AX and the complex business requirements of the AX users vSync collaborated with, deploying the same strategy was an essential step in the product's evolution.

For an EDI product, this is not the standard approach. Commonly, EDI software and hosting providers have a mapping utility that is constructed to allow it to interface to multiple ERP solutions. The approach is "ERP agnostic" rather than specific to unique attributes and industry-specific requirements for the given ERP platform. This becomes immediately visible in how "disconnected" the solution is to Microsoft Dynamics AX.

Most generic EDI solutions have their own look and process flow. The impact can be substantial in managing discrete applications, from an expanded learning curve to increased error rates to inordinate process complexity.

The Connection between EDI and the ERP Business System

vSync has been working with EDI customers since 1992. Our domain expertise includes EDI mechanics, as well as common business issues associated with EDI, coupled with an in-depth knowledge of Microsoft Dynamics GP and now, Microsoft Dynamics AX.

vSync believes that EDI processing must follow the same order processing flow of the ERP system being deployed. We also believe that the tightest level of integration possible yields better, more strategic short- and long-term results for clients. Combining our 17 years of EDI knowledge with hundreds of installations, and our deep understanding of Microsoft Dynamics AX's unique capabilities and gaps provides our partners and customers with the following design objectives.

- Improved functionality to streamline EDI processing and employee workflows
- Tighter integration and potentially fewer technical issues
- Reduced effort for partners and implementation specialists working with our EDI solution
- Improved ability to adapt our solution to specific Microsoft Dynamics AX requirements

vSync conducted ongoing research with Microsoft Dynamics AX customers to explore common pain points and ensure our solutions addressed or improved EDI processing.

Streamlining EDI Order Processing Workflow

vSync's design manages pre-processing of EDI documents using configurable business rules logic. Business rules can be set up to check for, *or dynamically change* data according to the needs of each trading partner. All inbound and outbound transactions are run through the business rules engine to streamline the oversight employees now must do manually.

"...Of course EDI should be integrated with the business system, but there is still a level of oversight that needs to happen once transactions enter our system— how can pre-processing be streamlined?"

– Manufacturer of Infant Products

The system will provide visibility to transactions that passed the validation process, as well as identify errors that occurred within a document to accelerate order processing. These errors could be as simple as pricing discrepancies or as complex as breaking out consolidated orders.

Pre-processing happens before transactions enter or exit Microsoft Dynamics AX which helps to ensure clean data is passed through the business system and trading partners at all times.

Using Business Rules to Deploy Exception Management

vSync's business rules reside *within* the AX environment, which means that any field or structure changes made to Microsoft Dynamics AX will not require redistribution and recompilation of business rules by the EDI provider.

vSync's configurable cross-reference, workflow, and mapping engine presents an unlimited amount of business rules the end user can configure to meet customer-specific requirements. End users can manage business rules themselves and configure and edit those rules as needed, with no additional required resources or investment.

AIF-Services require that the XML syntax of data coming into AX must match exactly with the AIF signature created in a web service. vSync's EDI integration does not rely on Web Services. By doing so, we removed the necessity for the application to be recompiled and redistributed whenever changes take place, thus any changes made to the application take place in real time with no impact on EDI processing.

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EDI solutions that rely on web services can offer a limited set of basic business rules that reside outside of the Microsoft Dynamics AX location environment (i.e., "in the cloud") and must be pre-configured by the EDI vendor. Changes that are made within AX require redistribution and recompilation, increasing the risk of data not being synchronized correctly. vSync's integration occurs at a level below the web-service layer which allows the application to reuse all of the same business logic that the service layer uses, but also provides a mechanism for maintaining on-the-fly updates to the application that tie directly to standard or custom business processes.

Improved Data Integrity and Synchronization

vSync's solution utilizes data that is resident to Microsoft Dynamic AX, which eliminates data integrity and synchronization concerns. EDI solutions not built for Microsoft Dynamics AX are restricted to 1-to-1 mapping of transactions, or must synchronize two sets of data—one set that resides in Microsoft Dynamics AX and an additional/duplicate set of data maintained by EDI vendor.

This is often the case with EDI solutions that utilize universal adapters. They must continuously receive data from AX to ensure that any changes made to AX (customer accounts, item numbers, etc.) are captured and that both repositories are synchronized. Changes made in the system at the field level or data level prior to that synchronization will cause transaction errors, and ultimately, charge backs.

Being tied to the AX Axd base classes allows vSync's integration to incorporate, in real time, any changes made to business rules in the AX system. Because our solution relies on data native to AX, no synchronization is required.

"...We added a field to AX to capture specific data about order handling instructions. For the next several days, we received transaction failures because the change wasn't recognized by our former EDI system. In addition, we incurred charge-backs because the outbound transactions didn't contain the data requested."

- Distributor of Videos and Books

Improved and Consistent Performance

vSync's EDI solution is designed so that regardless of a customer's transaction volume or the complexity of business rules required, speed and performance remain consistent.

Solutions that rely on synchronous data transfer via web services can experience significant performance issues when transaction volume is large, due to the synchronous nature of web transactions. Customers may not be able to predict their volumes or may experience fluctuations, which can inhibit daily performance.

vSync tested performance times by simulating transactional volumes typical of mid-market and enterprise customers on one AOS application server. We found that performance was often impacted due to the load thresholds the AOS application server can handle.

vSync's integration strategy to bypass web services enables customers to easily manage the EDI load variances on any given AOS server. Load balancing capabilities greatly improved performance times and offered the most flexibility for customers.

"...We needed EDI for Microsoft Dynamics AX - but we would have liked to do it without investing in additional hardware or software licenses and without impacting our other 3rd party applications."

- Distributor of Pet Food and Pet Products

Reduced Implementation Cost Structure

vSync chose to integrate their solution using a combination of Business Connector, MORPHX, and XML to integrate to Microsoft Dynamics AX. Using this approach, our solution reduces or eliminates additional license and hardware costs, as well as associated support and maintenance that is required of other EDI solutions using integration plug-ins to Microsoft Dynamics AX.

vSync recognized that AX customers will often deploy third-party applications in a complete AIF environment, and therefore made sure that vSync solutions could reuse the base queries set up to do the required processing. As an added benefit, customers will not experience increased loads or disruption to their existing AIF-Service dependent solutions.

"...We receive thousands of orders each day. How do I efficiently handle large EDI transactions in Microsoft Dynamics AX?"

- Distributor of Safety Equipment

About vSync

vSync is a leading provider of supply-chain compliance solutions for Microsoft Dynamics™ AX and Microsoft Dynamics™ GP. By designing EDI compliance solutions specifically for Microsoft Dynamics, our solutions enable suppliers to not only meet and manage customer-specific EDI and fulfillment requirements, but to incorporate the workflows associated with EDI in alignment with the business system. Since 1992, more than 800 customers have looked to vSync for EDI consulting and expertise.

For complete details on our EDI, Shipping, Warehouse, and Chargeback solutions, talk with your Microsoft Dynamics Reseller or visit <http://www.vsync.com/solutions>.

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