Business Integration Technology

Integration that makes sense

Case Study – Novus Europe Logistics B2B Integration

THE COMPANY

Based on decades of research and development at Monsanto, Novus International, Inc. was formed in 1991 and employs over 350 people in more than 20 countries. Novus creates animal health and nutrition solutions based on science. Over 2000 clients in more than 80 countries trust the Novus product family to be an integral part of their daily animal agriculture operations. Novus' mission is *"To help feed the world affordable wholesome food."* Novus believes in **Performance through Innovation** and employs more than 50 PhD Animal Nutritionists and Doctors of Veterinary Medicine who work continuously to create new products and programs for animal health and nutrition.

NOVUS® INTERNATIONAL, INC.

THE CHALLENGE

New business initiatives resulted in dramatic increases in the volume of sales orders and shipments in Novus' European operations. Novus Europe managed outbound customer shipments manually, printing and faxing documents, as well as telephoning transporters and warehouses directly to arrange shipping. As Novus experienced continued success in the European market, and especially in the increased order volume of packaged goods, the resources required would soon outstrip capacity of the logistics operation.

Manual effort for each order	Time
Telephone transporter / warehouse	average 5 - 10 minutes
Printing docs	average 5 - 10 minutes
Filing documents	average 5 minutes
Fax documents	average 4 minutes
Total Range	19 - 29 minutes

Table 1. Novus Europe handles about 5,000 orders annually and spends about 25 minutes on manual processes for each order.

Although most of the 13 warehouses and 16 transporters wanted to communicate with Novus electronically, many did not have the required infrastructure. A change like this would require effort on their part to implement an integration solution. There was no funding for the trading partners' projects. Each project needed to be perceived as beneficial to the warehouse or transporter as well as to Novus.
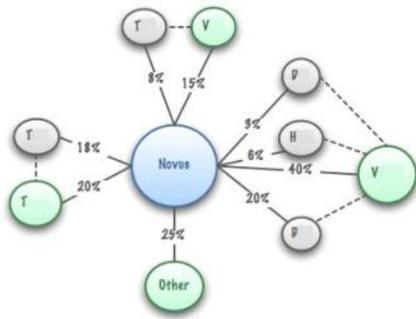
"We urgently needed to shift our logistics operations from a process that was manual phone and fax to electronic integration. Our goal was to automate the routine work so that our staff could spend their time trouble-shooting exceptions and focusing on logistics strategy for higher efficiency and lower cost."

- Mouche Marien, Logistics & Customer Service Manager

Figure 1 - The initial trading partner community consists of Novus, three warehouses, and five transporters that serve those warehouses. "Other" represents the transporters and warehouses not integrated in the initial project.

Another issue was that Novus had a customized legacy enterprise application and anticipated implementation of a new enterprise resource planning system within the next two years. This plan dictated that the solution had to accommodate this change with minimal cost and effort.

THE SOLUTION

With an internal staff working to capacity, the company looked for cost-effective integration expertise from an external partner. Novus International Project Global IT Lead Dave Ploch hired Business Integration Technology (BIT) to assist in the design, development and implementation of an integration solution for their Novus Europe team.

BIT implemented the Novus solution using a standards-based architecture based on Spring, Mule and other leading open-source projects. It leverages BIT's depth of knowledge in inter-enterprise integration and benefits from a loosely-coupled, asynchronous approach that works well with an enterprise service bus (ESB) and service-oriented architecture (SOA).

THE PROCESS

The solution provides Novus with a robust enterprise service bus (ESB) acting as the backbone for Novus Europe messaging. This solution is flexible in design and can provide for the accommodation of other Novus integration projects in the future. The solution leverages and builds upon BIT's already proven Enterprise Messaging Engine (EME). Using EME as the foundation for the ESB solution allowed the integration architect to spend less time implementing the messaging infrastructure. All documents flowing on the ESB are in the Novus enterprise format. The Novus enterprise format is based on CIDX XML tailored to existing Novus business processes. This allowed for maximum flexibility in integrating to existing Novus systems and trading partners.

The integration connected eight high-value Novus transporters and warehouses. These trading partners varied in technological sophistication and required a variety of solutions. Sophisticated trading partners were integrated using existing EME protocols such as FTP, HTTP and HTTPS. Unsophisticated trading partners were given a couple of choices for solutions, one being a version of EME (EME-CIDX) suitable to run in their enterprise that includes custom Web screens and is pre-configured to transmit business documents to Novus International. The other choice for a trading partner with the bare minimum of resources available was an email sent to them with an attached Web page for transmitting the required data back to Novus International.

The Novus solution is able to process two inbound business documents: Load Tender Response and Ship Notice. It also processes three outbound business documents: Load Tender, Shipment Instructions, and Certificate of Analysis, along with Receipt Acknowledgments for each of the outbound documents from the trading partners. All business documents are viewable from a "Business Documents Processor" (BDP) application. The solution implements XSL documents to produce user-friendly HTML for viewing these documents. All business documents will adhere to CIDX standards and are schema-validated when entering and exiting the solution. CIDX protocol is followed for capable trading partners including XML enveloping and exchange of receipt acknowledgements. Trading partner documents are transformed to Novus enterprise format before being stored in BDP.

THE RESULTS

BIT worked closely with both Novus Europe and Novus Information Technology to meet the challenges of each trading partner and integrate them into the enterprise process. BIT made sure that Novus Europe's users and Novus Information Technology had the information and training necessary to monitor and operate the system.

Business results for Novus Europe:
- Reduction in manual effort
- Real time update
- Increased accuracy of data
- Existing staff can handle future growth
- Existing staff can spend more time assessing other opportunities for business productivity and growth

Business results for Trading Partners:
- Reduction in manual effort
- Real time update
- Increased accuracy of data
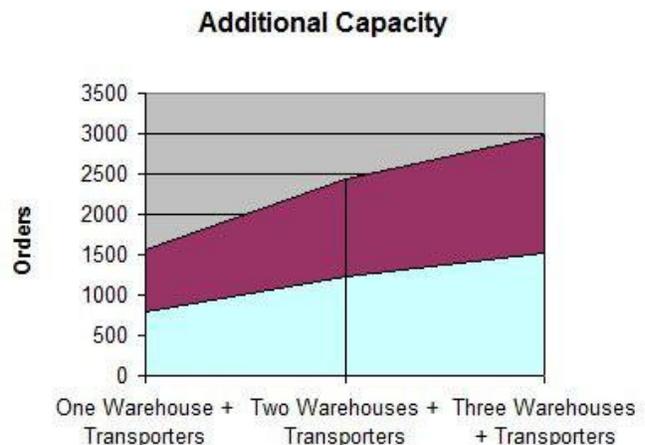
Figure 2 - This chart shows the range of additional capacity created by implementing one, two, and three of the initial warehouses with their associated transporters.

Novus estimates that the initial implementation will enable the European Logistics office to accommodate order growth of 1,000 to 1,500 orders per year without additional staff. Additional integrations will create additional capacity.

Other than delays caused by the trading partners that impacted their respective go-live dates, BIT brought the project in "on time and on budget." There were a few features added along the way with very minor impact on cost. "BIT allowed us to implement an integration solution for Novus Europe while building the foundation for an Enterprise Service Bus for all future internal integration," said Rick Baseley, Novus IT. BIT's work at Novus International has positioned the company for the future, allowing them to add further electronic integration more easily and more efficiently than in the past.

> *"We'll choose BIT again because of their excellent work on the project. They now have a proven track record at Novus International."*
>
> *- Rick Baseley, Novus IT*

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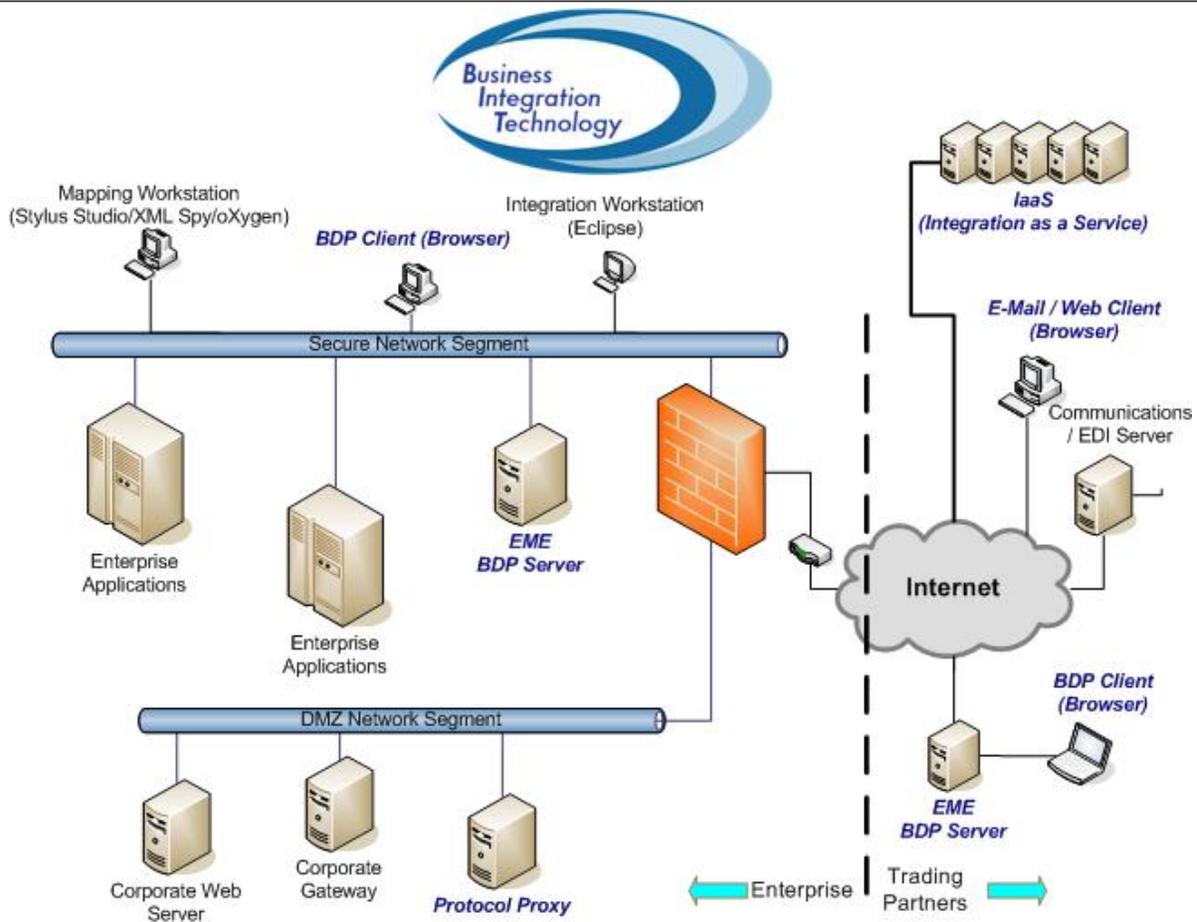
About Business Integration Technology, Inc.

Business Integration Technology Inc. (BIT) is a leader in B2B integration technology for transportation, logistics and supply chain management. BIT designs and implements highly cost-effective business-to-business connections that eliminate the costs of doing business with paper, phone and fax, bringing innovative value to shippers, carriers, 3PLs and companies looking to improve cycle time and reduce cost.

BIT was founded by the team that built the messaging engine that runs North American Rail. BIT is also a partly-owned subsidiary of Daugherty Business Solutions, a firm with over 20 years of experience helping their clients achieve their business objectives through the effective use of leading information technology and more than 400 consultants in St. Louis, Atlanta, Minneapolis and Chicago.

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