Johnstone Supply, Inc. is the largest HVAC/R cooperative in the United States. Johnstone Supply’s primary business is the distribution of replacement products on a national level to HVAC/R, appliance repair, and maintenance industries. The Cooperative is made up of more than 240 independently owned and operated member stores throughout the country. As members of the cooperative, store owners take advantage of economies in scale of advertising, marketing, purchasing, distribution and technology. Combining Johnstone’s store owners’ commitment to their business and customers with the resources available through a national cooperative creates tangible benefits for Johnstone’s customers and suppliers.

Located in Portland, OR, the primary purpose of the Johnstone corporate office is to provide members with an industry superior rate of return on investment by providing support and services to members in areas such as product purchasing (serving as a liaison between stores and vendors), marketing, and training and education. Johnstone distributes products to members from more than 350 industry-leading vendors through distribution centers located in Portland, OR, and Memphis, TN, and through a drop-ship program where the vendor ships directly to the store but invoices the corporate office.

Johnstone Supply has experienced steady growth since the establishment of the cooperative in 1981. Changes in the national and global business environment have affected the way in which Johnstone views its future. In the wholesale distribution industry, disintermediation, where customers can buy products directly from the manufacturer, bypassing the wholesale distributor, is just one environmental change that threatens the current status quo. In addition, electronic commerce is changing how business is conducted across the supply chain. The future of Johnstone lies in growing the business to become both a product and a service provider to customers -- offering quality, competitively-priced products with industry-leading marketing and training.

In addition to external challenges, Johnstone faces several internal business challenges that have prompted examination of current business processes. Johnstone is focusing on providing new and better services to their members and customers, such as providing a single view of inventory throughout the cooperative, central billing to national accounts and implementing technology to reduce the overall cost of doing business. In general, Johnstone has examined their current business to identify opportunities to re-engineer processes and identify best practices that will increase the effectiveness and efficiency of the cooperative.

The strength of local ownership offers challenges from a technology prospective. There are many different information systems being used throughout the cooperative members. Linking disparate systems together for reduced cost and competitive advantage through technology offers a considerable challenge to the cooperative.

Johnstone had a number of goals and objectives as they began a search for a technology architecture to support their efforts.

- Market and brand the Johnstone on-line catalog
- Continue move from BHS (Buy-Hold-Sell) to SSS (Sell-Source-Ship)
- Improve communications between stores
- Reduce transaction cost
- Develop unified e-commerce strategy
- Reduce excess inventory within entire cooperative channel
- Increase marketshare through enhancing national account programs
- Reduce cost of warranty claim processing
- Increase value add programs for customers
Improve information analysis of store activity
- Delivery state of the art back-office software to their stores

Ultimately, this effort is driven by the need to help the members grow their businesses and increase their return. By streamlining business processes in their network, Johnstone can handle increased volumes due to growth, without adding overhead costs at the same rate. By laying a solid technology foundation, Johnstone can provide members with the information and tools they need, without incurring excessive recurring IT costs.

Johnstone knew they must develop a foundation for which to build upon as they rolled out programs for store members and customers. This platform had to be flexible and able to evolve forward into new technologies as they became available.

**Three Stages of E-Business**
Most e-business strategies follow a predictable path. As depicted in figure 1, companies typically move through three stages as they develop their e-business strategy.

Stage 1, "e-commerce," uses the web as an electronic storefront for marketing, sales and services delivery. Stage 2, "Putting Processes Online," is an effort to reduce or eliminate costs that may be redundant to the supply chain or simply too expensive when using outdated manual methods.

Stage 3: "Value Chain Re-Creation," is all about rethinking relationships with suppliers and customers. Using the technology foundation of stages 1 and 2, distributors can, in stage 3, now offer more value-add to both their suppliers and customers as they deliver product to the supply chain.

Johnstone’s e-business strategy, while following a similar pattern, was designed from the start to move quickly from stage to stage (and in some cases in parallel to each other) in order to achieve the goals and objectives. To make this project a reality, Johnstone turned to NxTrend Technology to help build an architecture for their overall e-business strategy.

"We needed a partner who understood wholesale distribution, not just technology. NxTrend brought the domain expertise necessary to make our e-business project successful."

*Gary Daniels, President
Johnstone Supply*
Johnstone simultaneously started stage 1 and stage 2 of their e-business strategy. Their goal was to kickstart their web strategy while putting many of their manual processes online.

Stage I of the Johnstone e-business strategy involved putting their catalog online with shopping basket capabilities. In addition, a transaction delivery method needed to be implemented to deliver information not only from the e-commerce site to the Johnstone member stores, but to communicate electronically to their suppliers as well.

**Building Johnstone Private Trading Exchange Foundation**

As part of Stage I, Johnstone implemented the NxTrend Open Commerce Server (OCS) product line to create a private trading exchange for the cooperative. Building on the investment NxTrend has made to create a message transport and transformation hub, OCS provides for secure message and transaction routing to and from Johnstone store members, corporate and suppliers (see Figure 2).

Before implementation of a single transaction processing hub, Johnstone Corporate, stores and suppliers communicated through a variety of methods including phone, fax, EDI and email. These older methods increased costs for everyday business transactions. Johnstone knew they could reduce these costs dramatically and in some cases eliminate redundant processes.

OCS is the engine that drives Johnstone’s e-business strategy by facilitating the seamless flow of information among members of their trading community. At a basic level, the OCS transaction engine began the process of enabling their business to pass EDI documents more easily through the community; however, this engine provides for much more. The goal of the Open Commerce Server is to create an environment where everybody plays regardless of the back-office technology deployed.

Through Open Commerce Server, three levels of back-office system enablement are offered.

1. eMail or Fax (often considered “rip and read”)
2. EDI or Batch File Transmissions
3. XML Communications

OCS transports and transforms documents even though disparate levels of enablement are employed by each trading partner. An EDI document from one trading partner may be transformed into an email or fax to another. An XML document may be moved to the OCS and transformed into an EDI document due to the target trading partner’s back-office technology.

In order to meet the need for rapid deployment and to eliminate the high costs associated with building this transport and transformation engine, NxTrend offers this as a service to the Johnstone eCommunity.
Open Commerce Server simplifies the transaction flow for all members of the community and created an environment where "everybody plays." OCS becomes the engine behind the Johnstone e-community’s Virtual Private Trading Exchange without the time and cost to develop internally.

The Johnstone Online Catalog

With the foundation of the Johnstone Private Trading Exchange in place, the focus can now turn to implementing value add solutions for competitive advantage. Johnstone has produced a paper catalog for several years. This catalog provided a great deal of brand recognition for both the cooperative and the manufacturers brands for which they represent. Rather than have each Johnstone store create their own web store front and online catalog, Johnstone wanted to insure a consistent and unified e-commerce strategy was implemented across the cooperative.

Using NxTrend’s Trade Center and eCatalog Product, a single Johnstone e-commerce site was developed (see figure 3). Working with a creative web design company Miracle Studios, www.e-JohnstoneSupply.com was launched as a single site for all store members and their customers. This site provides for both a sales, marketing and services information portal and a true unified e-commerce site for the 135+ store members’ customers.

Using NxTrend’s eCatalog, the entire product line offered in the Johnstone paper catalog can now be searched on line via the web. Orders can be processed to the appropriate store member based on the customers’ logins.

Using the Insight product from Miracle Studios, each Johnstone store member can personalize certain sections of the portal with unique content for their individual store.

Customers can request logins and passwords to enable the use of the online ordering system provided by the NxTrend Trade Center Product. The customer first browses the Johnstone catalog (developed using NxTrend’s eCatalog product line). This catalog provides for a complete parametric or tree-type search mechanism. Customers can find products by browsing through the tree. A customer can add descriptive keywords, product attributes or vendor information to aid in the search. In addition, Johnstone Supply has a full graphics database to visually show the customer what they are buying. The customer has real time access to a variety of technical specifications and marketing brochures for the item. In addition, related items are automatically presented to the customer to increase potential add-on sales.

Customers can add products to their shopping basket for order processing. At this point, based on the login, pricing and availability from the appropriate store is retrieved across the network and displayed to the customer. Once the order is placed, an electronic order is then sent via OCS -- Open Commerce Server -- to the correct store for processing.
Virtual Supplier --
Insuring Everybody Plays!

While some store members could communicate real time across the network using NxTrend's Open Commerce Server technology, other member store's back office systems did not have this capability. With the disparate levels of technology at each Johnstone store, a method of providing temporary data stores was required to insure all members could participate and take advantage of the unified Johnstone online catalog and ordering capability.

Johnstone store members who can communicate real time using XML technology, can easily integrate into the Johnstone online catalog and ordering system. As customers request price and availability, an XML transaction is sent directly to the store members system. This system returns a real time message indicating the customers price and availability. For those stores without real-time messaging and transaction processing capability, NxTrend's Virtual Supplier was implemented as a data storage mechanism for inventory availability, customer pricing and customer profile information.

Johnstone store members not capable of Level 3 (XML real-time) communications, can populate (via Open Commerce Server) the Virtual Supplier Customer, Inventory and Pricing files on a regular basis. This is accomplished via EDI documents like an 832 for pricing, an 852 for inventory availability and a customer ASCII file import. As customers of Level 1 or 2 stores use the Johnstone catalog, pricing and availability is pulled from the Virtual Supplier database. The approach of using NxTrend's Virtual Supplier insures "everyone plays" regardless of their back office systems technology.

Where Do They Go From Here?

With the foundation of Open Commerce Server, Virtual Supplier, and the Johnstone catalog and online ordering system built, many companies would stop here. Johnstone sees this as just the beginning of offering a variety of value-add services to their customers and store members. Future plans include using the NxTrend bizLinx architecture to offer:

- Visibility of excess inventory across the Johnstone Supply network via the bizLinx Surplus City application
- Store specific catalogs via the bizLinx eCatalog for store members product not offered in the central Johnstone catalog
- Continue move from "build to stock" to "build to order"
- Improve communications with dealers & distributors
- Improve information analysis of distributor/dealer activity and better product demand forecasting by analyzing product movement, location, quantity/dollars, application, and sales information
- Deliver operational software to their customers to help them run their businesses more efficiently
- Product training and marketing programs offered
- in full multi-media formats
- KPI by store for comparative analysis
- Provide links to specialized applications from the supplier
- Incorporate Wireless e-commerce applications to extend their reach to mobile customers and employees
- Deliver back-office applications to their store members via an ASP model to reduce both the time and cost to upgrade their operations through technology.

**The Johnstone E-community**

While clearly a journey rather than a destination, Johnstone is committed to continuous improvement in their operation. The establishment of their own private trading exchange provides a foundation for them to grow their business without a corresponding increase in costs. In addition to their e-community project, Johnstone Corporate is in the process of implementing NxTrend’s SX.enterprise and Total Warehouse Logistics (TWL) to further improve the efficiency of their organization. Johnstone understands there is no silver bullet when developing their overall e-business strategy. NxTrend’s bizLinx is the foundation for their strategy of continuous improvement and innovation.
About NxTrend Technology, Inc.

NxTrend is a leading provider of enterprise-wide solutions designed to enable suppliers to better manage inventory, order processing, sales, warehouse logistics, and electronic commerce. NxTrend’s supply chain solutions are targeted to the needs of suppliers of building materials, electrical, plumbing, HVAC, and industrial products. NxTrend’s Strategic Exchange™ (SX) product line includes sophisticated back-office supply-chain information processing solutions; complete warehouse logistics offerings with Radio Frequency (RF) capability; and internet-enabling applications that build e-commerce capability into the supply-chain business model. SX operates in both UNIX and Windows NT environments.

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