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Chapter 5

Web-Enabling the Supply Chain: An Exploratory Case Study

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INTRODUCTION

THE INTERNET HAS FUNDAMENTALLY CHANGED how businesses manage their supply chains. It has spawned tools and technologies that help the decision makers better manage customer relationships, efficiently integrate internal applications, and collaborate in real-time with trading partners. The Internet also brings with it the promise of opening supply chains to global markets and meeting and exceeding customer expectations with a very efficient use of working capital.

The Internet has also changed the role of distributors in the supply chain. From being the primary channel for product distribution for major manufacturers, they are emerging as service providers—with 24/7 availability to serve any of their customer needs. As large corporations are cutting echelons in their supply chains, distributors are competing for a shrinking pool of customers. Embracing new technology and innovative business models to reengineer their processes are emerging as key priorities, especially

for small to mid-size distributors. Our intent in this chapter is to show, through a case study, how the Internet can be leveraged to reengineer a distributor's supply chain.

It might be of interest to our readers for us to explain our motivation for writing this chapter. Reeja, the second author of this chapter, was an employee in the distribution organization we describe. She was, in part, charged with the task of analyzing the current business processes for the distributor. Her assignment also involved suggesting ways in which this distributor could embrace the Internet and the associated efficiencies that go with it. Reeja, in the meantime, was completing her Masters degree at The University of Cincinnati where I, the first author, was her major Professor. Thus began our collaboration. During our research we found very few examples that the Internet was changing the distributor's supply chain. Our primary motivation behind writing this chapter is to show how distributors can take advantage of the latest initiatives that are revolutionizing the retail world, either by reorganization of processes or by incorporating new information technologies. To that end, the first section describes some of the major trends that are shaping the distributor's role in the supply chain. The next section describes the distributor's business process. The section that follows describes some of the inefficiencies in the system and the next describes a proposal we made to the distributor to Web-enable their supply chain. The next section anticipates the potential benefits of Web-enabling the supply chain. A series of performance measures the distributor can use to measure the benefits is outlined in the section that follows. We provide a summary and some conclusions in the final section.

HOW THE INTERNET IS CHANGING THE DISTRIBUTOR'S ROLE IN THE RETAIL SUPPLY CHAIN

We will highlight in this section four trends that are revolutionizing the retail supply chain. Since our case study deals with a distributor in the retail supply chain, we will address these trends from a distributor's perspective.

Customer and Employee Self-Service

Companies that do business over the Internet have discovered that the best way to gain customer loyalty and improve customer service is to provide the customer with the requisite tools that will help customize and streamline business transactions. For the distributor, this would mean empowering the retail and the mass-merchandizing customer to browse catalogs online, place and approve orders, check status of orders in real-time, and finding solutions to oft-encountered problems.

As an illustrative example (see *Fortune*, August 1998 issue), Cisco Systems has had phenomenal success with self-service applications. 75 percent of its revenues (about $8.5 billion) are through unassisted sales through its Web site. Through its Cisco Connection Online Internet site, customers can configure orders, check prices, monitor order status, and obtain invoicing information. Additionally, customers from over 50 countries get customized service and support on the Web site. The results have been spectacular. Cisco has reduced lead-times from three weeks to three days and reduced the order acknowledgment cycle time from 12 hours to two hours. While their revenues have grown by 500 percent, the number of employees required to service the increased customer base has grown only by one percent. All of Cisco Systems customer self-service applications are tied-in with their ERP Systems and backend fulfillment systems making it a nimble and a flexible enterprise. It is no wonder then that Cisco was one of the best performing stocks in the 1990s.

Employee self-service is another major element of a Web-enabled supply chain. On the sales side, technologies are available that will integrate all potential sales leads (and eventually sales) from all different sources, providing a single source of business intelligence for decision makers. Additionally, enterprise transaction systems are integrated with other applications, empowering employees to make better decisions.

Web-Based Vendor Managed Inventory and Automatic Replenishment

Multiple organizations in the supply chain often independently create forecasts for the same products—all using their own assumptions, measures, and time horizons. Research has shown that such independent planning is suboptimal, and often results in waste as inventory or a decrease in customer service level of the supply chain comprises each of these organizations. Additionally, as the forecast is passed on in the supply chain, it propagates with increased volatility—a phenomenon popularized as the "bullwhip effect" or the "Forrester fly-wheel effect" (Lee, Padmanabhan, and Whang 1997). A higher variance in order forecast translates to higher levels of inventory to buffer this uncertainty, and hence higher costs of inventory. One initiative to counteract the bullwhip effect in the retail sector is what has come to be known as Vendor-Managed Inventory (VMI).

VMI is a technique where a supplier is empowered to manage inventories of agreed-upon items at distributor or retailer locations. VMI is now a widely practiced initiative in the retail industry. Manufacturers like Kraft Foods, Procter and Gamble, Xilinx and their distributors, and retailers like Wal-Mart have well-developed VMI systems. In

a Web-based VMI system, the supplier monitors inventory information via the Internet and replenishes the item(s) according to a predetermined contract. Scott Stratman, president of The Distribution Team, a consulting company in Colorado Springs, CO, estimates that by using VMI distributors have, on an average, cut the time for order fulfillment from a range of 22 to 29 days to one of 14 to 17 days (see for example, Emigh 1999). Although VMI is most popular in the consumer goods arena, several other industries have instituted initiatives that are similar in spirit, but are often tailored to the vagaries of that particular industry. For example, information sharing and replenishment coordination mechanisms have been called quick response in the apparel industry; efficient consumer response in the grocery industry; efficient foodservice response in the foodservice industry; and efficient health consumer response in the medical/hospital supplies industry.

VMI has the following potential benefits (see for example, Fox 1996; Holstrom 1998): (1) Improved customer service, (2) reduced inventory, (3) reduced uncertainty for the supplier, and (4) reduced administrative costs.

Collaborative Planning, Forecasting, and Replenishment (CPFR)

Over the last year the B2B electronic commerce world is being revolutionized by a new supply chain initiative called Collaborative Planning, Forecasting, and Replenishment (CPFR). Initiated by the Voluntary Inter-Industry Commerce Standards (VICS) association, CPFR promises a new business model, the central theme of which is for businesses, primarily part of the retail supply chain, to align processes and standardize technologies to share forecast and other planning information securely, simultaneously, globally, and in real-time (see for example White 1999). Over 30 large manufacturers, distributors, and retailers in the general merchandise, apparel, and grocery industries are initially part of this initiative. The key idea is for partner firms to share information—forecasts, pricing and promotions, store openings, production and shipping schedules, inventory and replenishment information, and so on—over the Internet and plan logistical activities together in an attempt to produce overall benefits to the partnership. Several pilot tests of the CPFR initiative have been conducted with great success. For example, in the apparel industry, Sara Lee and Wal-Mart used the CPFR process to decrease inventories by 12 percent while increasing service levels by 2.7 percent for 23 branded underwear items (Hill 1999). Furthermore Procter and Gamble anticipates saving over $1.5 billion by 2005 using the streamlined CPFR initiative (Williams 1998).

The Emergence of Exchanges

Items that are procured by distributors can be classified into two broad areas: "product specific" items that are directly used to assemble the product, and generic items that are used for maintenance, repair, and routine operations (MRO). Product specific items are often customized for the buyer—decisions to buy these products are influenced largely by price, quality, availability, delivery flexibility, and serviceability. Additionally, the suppliers are geographically diverse and highly fragmented, making the purchasing decision difficult and cumbersome. The Internet has spawned a new and powerful middleman called the "Net Market Maker" (NMM) who brings the promise of connecting fragmented buyers and sellers, lower transaction costs, and price transparency in the supply chain. Certain NMMs (called "Verticals") specialize in specific industries and provide customized solutions for the procurement of product-specific items. For example, SciQuest aggregates catalogs of life sciences supplies; FreeMarkets sets up customized reverse auctions for big industrial buyers; and eSteel, serves as a global exchange for trading steel. In the retail industry, for example, Retail.com is a B2B "metamediary" that provides marketing, logistics, procurement, and replenishment services to the apparel, jewelry, footwear, and grocery industries. On the other hand, there are NMMs (called "Horizontals") that cater to many industries, primarily MRO items. For example, MRO.com brings together buyers and sellers of MRO items through a number of market mechanisms such as auctions, catalogs, and exchanges.

NMMs give distributors in the supply chain the opportunity to manage their primary asset—inventory—in an efficient manner. Excess inventory can be auctioned while peaks in demand can be met by buying from certified suppliers at reasonable costs from these exchanges.

THE CASE STUDY

Company X is a mid-sized distributor of specialty goods based in Cincinnati. They distribute around 90 product classes comprising 12000 Stock keeping units (SKUs). The company's main product line is cake decorations, used primarily on elaborate cakes made for special occasions. They also stock other products like toppings (e.g., "Regal Ice"—a special type of icing for cakes) and specialty edible products like "Bakery Bites." They also "virtually stock" (through drop-ship agreements) decorating equipment (for example, cake kit-cards, stencils).

Company X's Supply Chain

Their major international suppliers are toy and equipment manufacturers from Europe and Asia. Domestic suppliers include molders of plastic goods and sugar products. Their distribution channel consists of supermarket in-store bakeries, retail bakeries, cake and candy retailers, and other distributors to this market. Grocery outlets like Kroger, mass merchandisers like Wal-Mart or Kmart, and specialty retail shops form their major customers (see Figure 5.1 for Company X's supply chain).

Order Management

Customers place orders via phone, E-mail, mail, fax, or electronic data interchange (EDI). When a "new" customer places an order, the customer service representative hand writes the order since there is no previous record for the customer. This is taken to the customer service manager who provides a new account number for the customer and, after performing a credit check, certifies them for inclusion in their customer database. For an existing customer, the order details (line items and the quantity) are recorded on their electronic database. Currently in Company X, the EDI system is not

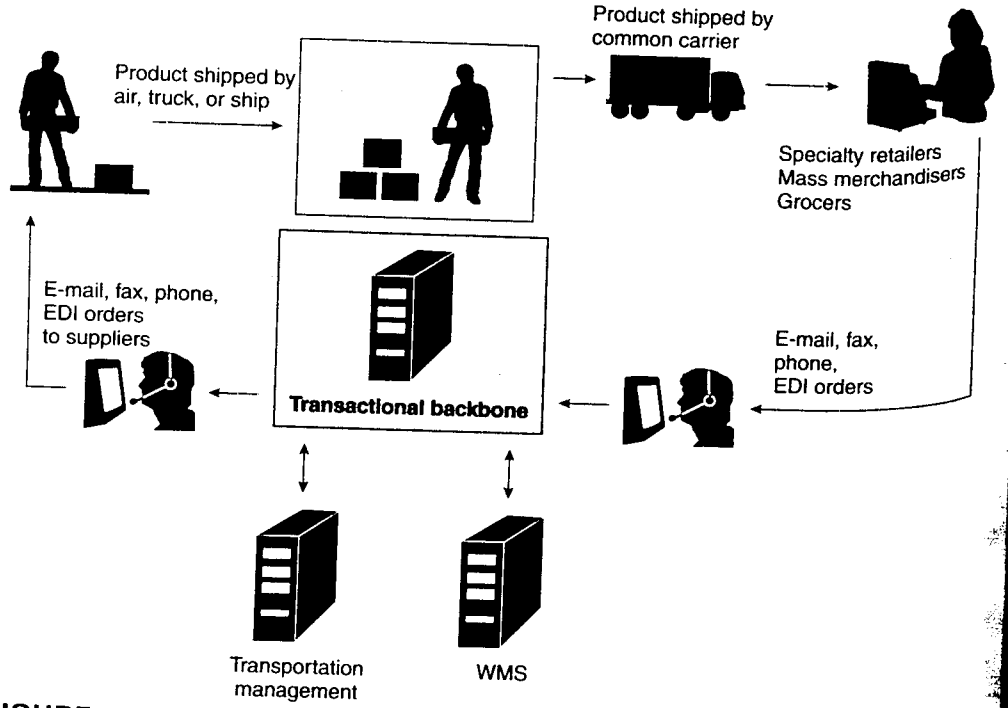

FIGURE 5.1 Company X: current supply chain.

internally connected to the order entry system; hence, after dialing the carrier and obtaining the purchase order, the Customer Service Representative has to manually enter the details into the accounting system. Around 12 to 15 of the customers place orders through EDI. Company X also does invoicing for two to three companies through EDI. The need arose since some of the major customers are conducting their transactions only through EDI.

- Types Of Orders
  - Regular Orders
    - "Regular Net30": The customer is billed through the invoice and pays Company X the shipping charges.
    - Regular COD (Collection on Delivery): In this case, in addition to the shipping and merchandise costs, there is a separate handling charge, which is to be billed along with the shipping charges.
  - Prepaid Orders
    - "Prepaid": If a customer meets some pre-specified criteria (for example ordering above a threshold), Company X bears the shipping charges.
    - "Prepaid COD": This is similar to the Regular COD, except that Company X bears the shipping charges.
  - Consignee
    - Company X would bill the customer for the product, and the carrier bills the shipping charges directly to the Customer. There are no handling charges since there is no COD involved.
- Handling of Orders
  - A purchase order ("Picking Ticket" [PT]) is generated based on the type of delivery, and overnight and two day deliveries get the highest priority. If the item is in stock, it is "picked" and shipped to the customer, typically within 48 hours. An invoice is posted back to the customer along with the order when it's shipped. In case the item is not in stock or if only a part of the requested quantity can be sent to the customer, the customer is notified and a partial order is fulfilled. No back orders are allowed and part of any order that cannot be fulfilled is lost.
  - There are exceptions when multiple picking tickets are generated:
    - customer orders of more than two "Cake Toppers" (CTs) that get separated into a different picking ticket (PT), and are packaged separately (the other items are picked on a different PT from the warehouse);
    - drop ship items like cake kit-cards and cake stencils transferred via phone, fax, or E-mail to other pre-selected distributors; and
    - very large quantities of Regal Ice to await special packaging.
  - Around 100 orders are received daily and the average number of line items per order is 12. On average 55 to 60 orders are opened every day (including domestic

and export orders), depending on priority. The VP of Operations estimates that they have a capacity of processing around 83 to 85 orders per day. Translating to an efficiency of 66 percent (55 out of 83).

Forecasting

The goods ordered from the suppliers are classified into two seasonal (40 percent) and nonseasonal (60 percent). Forecasting is done using the following methods:

- Demand based on moving average estimates
- Demand based on the knowledge of various upcoming events, a minimum level of stock is maintained
- Demand based on the survey responses from the customers. The surveys are carried out by the sales forces, who also design the questionnaires

The ordering is done based on the forecast. Ordering of edible and plastic goods are also done based on the various occasions like Christmas, Halloween, Thanksgiving, Mother's Day, and so on. The forecast also factors for the various colors associated with each of these occasions like red for Christmas, orange for Thanksgiving and Halloween, and so on. Though these cake decorations can be nonseasonal items, they still are affected by the various seasons.

Inventory Management

Company X currently maintains a two-month supply of all products. Products (or raw materials) are ordered to meet this minimum inventory target. With the exception of pastry tubes which have a lead-time of around 12 months, lead-times vary from 24 hours to 6 months for import orders and 1 to 3 weeks for domestic orders. The main countries from which products are imported are Japan, Europe, Great Britain, Germany, Philippines, Malaysia, South Africa, Taiwan, and Korea.

Inventory is tracked both manually and electronically. It is estimated that around 80 percent of the inventory is tracked accurately. A warehouse management system (WMS) is used to receive, store, pick, and pack incoming orders. The orders are downloaded into the WMS at the beginning of the day. The WMS generates picking sequences that are followed by the "pickers." The picked orders are collated and sent to the shipping stations.

Shipping

Company X ships hundreds of packaged boxes to its customers every day. Orders and miscellaneous shipments are packed along an assembly line and are shipped at one of currently three manifest stations. Shipments may be just single boxes, a few boxes, or truckload shipments. The picking ticket identifies all shipments. The picking ticket lists the shipping address and zone, the items to be shipped, and their value. All the boxes to be shipped are labeled. Packers mark the picking ticket to show that an item has been packed. Thus, the picking ticket also serves as a packing slip. For any given order, the details (list of items, value, and billing and shipping address) are retrieved at the manifest stations from the accounting system using the picking ticket number. Any discrepancies between the order and shipping details are manually reconciled, and if necessary, any variances are reported to the customer via telephone or E-mail.

Metrics

In addition to financial performance, Company X uses three other metrics to measure efficiency:

- The completeness of an order. Currently the efficiency is 70 percent.
- Delivery efficiency: 80 percent of their orders currently ship within 48 hours.
- Processing capacity, currently at 66 percent (around 55 orders are processed per day with a stated capacity of 83).

Currently no metrics exist for inventory or cycle time.

COMPANY X'S INEFFICIENCIES

Order Management

- Currently only 66 percent of the order processing capacity is used.
- Information on orders is not updated in real-time. Orders are aggregated from various sources—E-mails, faxes, EDI, sales reps., and so on. This leads to inaccurate available-to-promise quantities.

- Sales representatives track opportunities and orders by various formats, making it practically impossible to put together a comprehensive knowledge base from which forecasts can be made.
- EDI is not used to its full potential. As of now Company X re-keys all the EDI data into their accounting system. EDI is also a source of concern since the company spends a large portion of its information technology budget maintaining the system and training the employees.
- The different ordering methods necessitate several well-trained customer service personnel who understand how the order can be translated to the current accounting system. Additionally, these personnel also answer calls regarding status of shipments for existing customers and product questions for new customers.

Forecasting

- The VP of Operations has indicated to us that the lack of accurate forecasts of customer demand is a major contributor to inventory. The customer service surveys have proven to be inadequate in estimating customer demand.
- Long and often unpredictable lead-times from suppliers, compounded by uncertain customer ordering patterns, make it very difficult for Company X to make reliable inventory decisions.

Inventory Management

- Company X does not have a "true" picture of inventory in their warehouse. Incoming orders get delayed because of incomplete inventory information.
- Products are seasonal so Company X builds up inventory to satisfy peak seasons. Additionally, large lead-times from suppliers force Company X to carry large amounts of inventories.
- The hand-off from the order management system (part of their transactional backbone) to the WMS often requires re-keying.
- The warehouse personnel do not have real-time access to order information, resulting in inefficient picking operations.

Shipping

- Company X currently uses a stand-alone software to compute shipping rates and discounts to its customers. It is not completely integrated with the transaction backbone.
- Shipment tracking is not available in real-time through the order processing system.

Other Considerations

- Big retailers are testing emerging supply-chain initiatives like Collaborative, Planning, Forecasting, and Replenishment. Company X is under pressure to comply with CPFR standards with some of its large customers.
- Many suppliers are demanding access to Company X's inventory and forecast information so that they can plan their operations effectively.
- Company X would likely benefit from the efficiencies of the NMMs.

WEB-ENABLING THE SUPPLY CHAIN

Company X wanted to use as much of the existing hardware and software as possible. They are currently using Windows NT as their base operating system—the transactional backbone, WMS, and the transportation management software all run on the Windows NT platform.

We proposed a three-step method to Web-enable Company X's supply chain: (1) a Web storefront, CPFR applications, and a customer relationship component at the front end; (2) internal integration of all their applications; and (3) integrating suppliers, exchanges, and continuous replenishment partners at the back end (see Figure 5.2 for the Web-enabled supply chain for Company X).

Front End Design

Web-Storefront with Customer Relationship Management Modules

The vendor that provided the transactional backbone to company X was in partnership with the leading customer relationship management (CRM) software vendor. The CRM comes as a bolt-on addition to the transactional software. This CRM

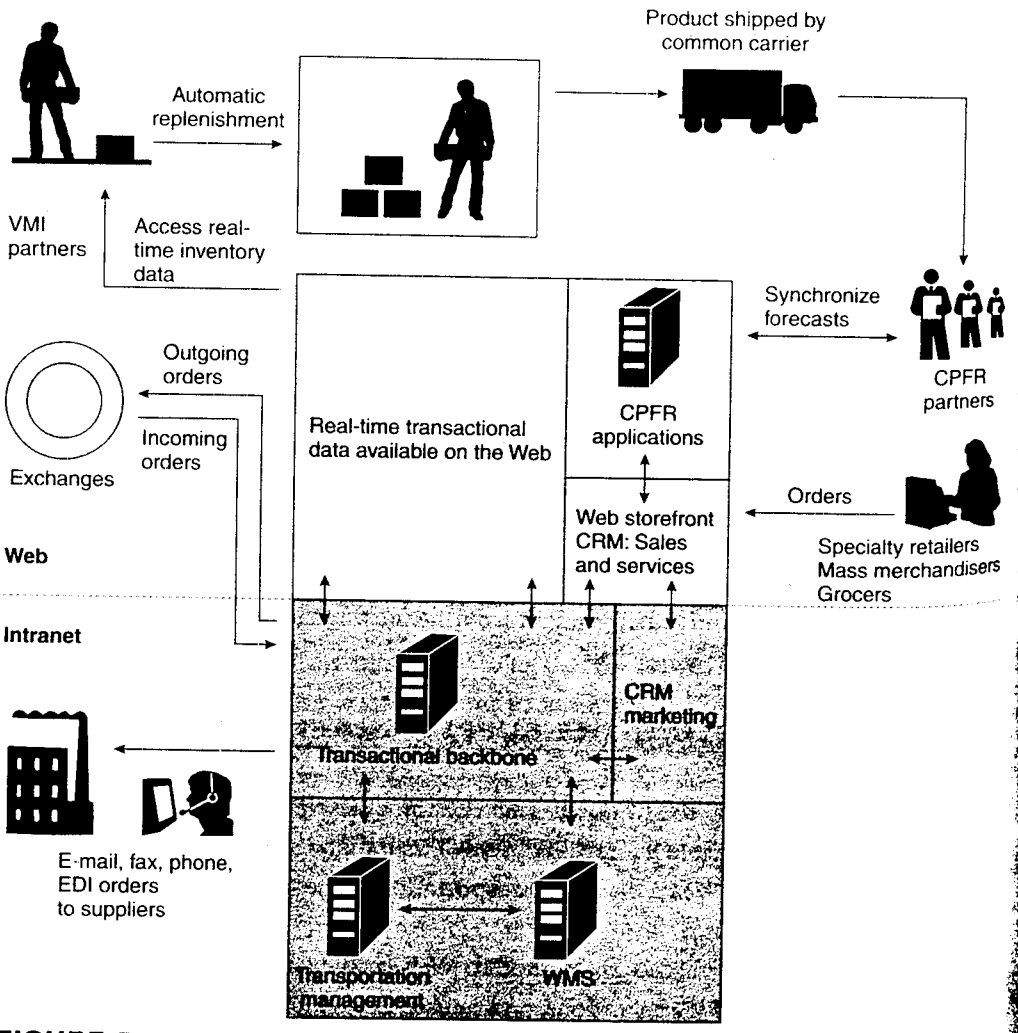

FIGURE 5.2 Company X: Web-enabled supply chain.

component has two aspects to it: a Web storefront with sales and service applications and a marketing application installed on Company X's intranet.

The reengineered ordering process will warrant customers to place orders via Company X's Web site. The Web storefront will guide new customers to a registration process that will collect all necessary information about the customer. The customer will then be issued a unique "user name" and "password" that can be used to place future orders. Logging in will give access to the catalog of all available products and their availability and price (including any discounts if available). The customer can then configure the order, choose a method of payment, and decide on the appropriate mode

of shipment. Once the order has been placed, the customer will be able to log in to the system at a later point of time and check the status of the order.

The CRM component keeps track of all the purchases, and on return visits, will suggest opportunities for up sales. This storefront also has a service component that helps customers troubleshoot any problems that they may have with their order or Company X's product offerings.

The marketing component of the CRM module tracks, in great detail, sales opportunities from different sources. Every sales representative can log on to the company intranet and track or update his or her progress with different accounts. The knowledge base from all the sales representatives, including unsolicited E-mails, and phone calls, are all recorded on the same database which will make forecasting easier.

CPFR Partners

For large retailers and manufacturers interested in a CPFR-like partnership, Company X can start the collaboration process by setting up dedicated links. Through the Internet, Company X can share forecasting and sales data with these large manufacturers and retailers. The greatest advantage of this would be that Company X no longer has to forecast its demand but rather create a requirements schedule to meet the predetermined forecast. The software vendor who provides the transactional backbone for Company X also has an agreement with a CPFR applications provider, making it easy to integrate all CPFR transactions with the transactional backbone.

Internal Integration

Both the WMS and the transportation management software at Company X are Windows NT based and can be easily integrated, through custom-designed programs,[1] to the transactional backbone. Integrating the WMS has two distinct advantages: the picking operations are now readily available through the intranet, making it easy for anybody with access to check the status of the orders; and the warehouse personnel can access to real-time order data which will enable dynamic optimization of the picking operations.

Linking the transportation system makes it possible for anybody on the intranet and registered customers via the Web to track all the packages that are shipped. Additionally, all the shipping manifests can be electronically reconciled with the orders.

1. There are several so-called third-party "vertical solutions" available that can be bought off the shelf.

Integrating the Back End Processes

Automatic Replenishment Partners

Company X is in talks with several of its major suppliers to establish a Web-based VMI system. The supplier will simply log in to Company X's Web site and, through a secure area, gain access to inventory information for the product it supplies. Company X's planners can control the scope and detail of the information available to the supplier. Once the inventory level of a certain product falls below a certain specified quantity, Company X is alerted, and when given the go-ahead, the product is immediately shipped to Company X's warehouse. The replenishment process is completely tied in to the transactional backbone, making it possible to track available-to-promise quantities.

Integration With Exchanges

Company X sees NMMs as a major source to identify new suppliers. A first step would be to complement chosen suppliers with the suppliers they already have, and primarily use the NMMs to balance demand and supply—procure the required product during demand spikes and auction off excess inventory when there is an unanticipated build-up.

There are several B2B integration companies in the market who can integrate Company X's transactional backbone to the exchange transactions. This will enable real-time update of the order and inventory information.

Other Orders

For those suppliers who have an Internet Web storefront, the purchasing personnel can directly place the orders via the Internet. For those suppliers who do not have Internet ordering mechanisms, Company X needs to place the order in a format that is acceptable to these suppliers. The purchasing personnel can configure the transactional backbone so that it automatically converts the order to the appropriate format.

EXPECTED BENEFITS

Order Management

- A Web storefront simplifies the ordering process. A customer just logs on to the storefront, configures (via the CRM system) the order to specific requirements, automatically seeks approval from the supervisor (if required) and places the order—no complicated protocols are involved. The CRM system maintains a detailed customer database, customizing the ordering process for each customer.

- 24/7 system availability to place orders online—customers do have to place orders only when customer representatives are available.
- Stock and shipping information is always available in real-time, making it easy for the customers to plan their operations.
- The CRM system seamlessly integrates across sales teams and locations, creating a comprehensive database of sales opportunities and actual sales, making future forecasting easier. The CRM system can also be used to collect customer feedback online which can also be used in the forecasting process.

Inventory

- With CPFR-like partners, Company X no longer has to forecast demand—just resolve any discrepancies they find in the joint forecasts. This eliminates the safety inventory they have to carry to buffer against uncertain demand.
- Automatic replenishment partners can check the stock information in real-time and plan cost-effective ways to replenish the product. This will also substantially cut down on the inventory cost as Company X no longer has to plan for supply uncertainties.

Administrative

- Single database to store information regarding product, customer, manufacturer, order entry, shipping, accounting, finance, and any related areas if any.
- Cutting down cost in following areas:
  - Custom training for EDI, maintenance and forms.
  - Costly person-hours in customer support can be reduced.
  - Since the databases are seamlessly integrated, no re-keying is required, saving person-hours that can be channeled elsewhere.
- Real-time accurate reports on operations can be easily generated.

HOW TO MEASURE BENEFITS

In addition to the standard financial measures of performance, Company X needs to track the following supply-chain measures to track their efficiency.

Procurement/Supplier Measures

This is calculated by measuring the Supplier Order Fulfillment based on percentage of Purchase Orders (POs) delivered on or before the agreed upon due date and the completeness of order. Also for continuous replenishment partners, a regular assessment of the inventory levels will give an accurate representation of the efficiency of the VMI system.

Inventory Measures

The inventory turnover rate for Company X is currently lower than the industry average. By sharing information with trading partners, substantially lower levels of inventory can be maintained, increasing the turns per year. As the relationship with trading partners progresses, Company X can track the increase in turns in inventory. In addition to turns, Company X can measure inventory accuracy by periodically matching the physical inventory to the one in the information system.

Time Measures

Cash-to-Cash Cycle Time

This is the elapsed time from payment of suppliers to collection of payment from customers. With inventory visibility and faster turns, the cash-to-cash cycle time can also be reduced.

Order Cycle Time

Cycle time for an order starts from the processing of the picking ticket to the time the order is shipped to the customer. Company X anticipates that this will be reduced by 50 percent (to within 24 hours).

Quality Measures

This measure can also be determined by measuring the number of defective parts in total number of units received. Typically, measures on quality are included in the VMI agreement with the suppliers. However, for the collaboration to be effective, both partners must have well-defined measures of quality.

Customer Service Measures

Customer Order Fulfillment

Company X must maintain detailed records on number of orders opened per day, order cycle time (time to process and ship the order), and completeness of the order so that it can focus on those items that consistently perform badly on order fulfillment measures.

Customer Satisfaction

With the implementation of CRM module, the customer can troubleshoot any problems with the ordering (or the process) on their own. Additionally, the customers can update the CRM knowledge database, which will help solve future problems.

Return on Technology Investment

Company X estimates the proposed changes to the information system would cost about ten percent of yearly sales. With the savings in inventory, faster order processing, and newer markets, the anticipated payback period is about ten months!

SUMMARY AND CONCLUSIONS

Our intention in this chapter was to show, through a case study, how a small to mid-size industrial distributor could Web-enable their supply chain. The central premise is that integrating and Web-enabling all the operations increases overall efficiency and adds critical service components to the distributor functions. This will not only enhance their competitiveness, but will also make them a vital element of the retail supply chain.

We also point out that Web-enabling the supply chain is "easier said than done." The distributor in our case had only one distribution center from which products were distributed, making their operations less complex than large distributors, who have several facilities, sometimes all over the world. Additionally, their information technology leaders had the foresight to incrementally buy information systems that operated on the same platform and could be integrated in the future. Using the Internet as a strategic tool, we showed how this distributor can manage its most important asset—inventory.

Ultimately, every distributor needs a CEO who understands how internal integration and collaboration with business partners will reduce inventory, improve order fill-rates and cycle times, and eventually add value to the stakeholders in the company.

Bringing the idea to fruition takes time, effort, and a lot of money. However, the benefits of collaboration, at least historically, seem to outweigh its costs.

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