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## Yantra and ChemPoint: Extraprise Management in the Specialty Chemical Industry

Robert Jones of Superior Dairy Products needed another drum of annatto dye – a natural food coloring extracted from annatto seeds that gave certain cheeses their golden color<sup>1</sup>. Opening his browser, he logged onto the ChemPoint web site, found the product from his list of prior purchases and placed an order. With the final mouse click, he started a workflow process that reached two tiers back in the supply chain and offered visibility from order placement to arrival at Superior Dairy. This eight-stage process included supplier allocation and verification, logistics management, and delivery (see Exhibit 1).

Guiding this workflow process was a software solution from Yantra Corporation called PureEcommerce. CEO Devdutt Yellurkar described the vision behind this service as the following:

Yantra provides solutions for managing complex supply chain transactions across the extraprise.

Yantra was integral to a “best-of-breed” technology solution that ChemPoint had assembled to serve its customers and suppliers. With no existing solution that could provide all their needs, ChemPoint selected vendors that offered a balance of functionality, speed, and cost, which fit their Internet focus and start-up financing. Each vendor supplied a piece of the system comprising both forward and backward facing applications. Yantra managed the massive volume of transactions for each order, becoming the focus of the order fulfillment process for sell side solutions such as catalog and customer relationship management, internal systems such as finance, and the fulfillment processes of suppliers and logistics providers.

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<sup>1</sup> Some customer and supplier information has been disguised.

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With a powerful system in place, ChemPoint was rapidly executing their plan to build a far-reaching network of fine and specialty chemical suppliers and customers. Yet, for both ChemPoint and Yantra, the state-of-the-art in extraprise management of such virtual supply chains was rapidly evolving, giving neither firm the luxury to relax and celebrate their current success.

## **Vopak and the Chemical Industry**

The mature chemical industry was not characterized by rapid technology adoption. While ERP and other internal solutions existed within the industry, there was little historical integration across the diverse manufacturers and distributors that made up the industry. However, Royal Vopak, a Netherlands-based global logistics provider to the oil and chemical industries, saw this as an opportunity. Founded in 1616, Vopak and its subsidiaries had consistently tried to set the standard with innovations.

Vopak's path into Internet technology started through its subsidiary Van Water & Rogers (VW&R), North America's largest chemical distributor with over 130 facilities. In early 1997 VW&R decided to address emerging web technologies through the creation of a team tasked with exploring Internet strategy. The result was an industry-leading launch of their external web site ([www.vwr-inc.com](http://www.vwr-inc.com)) and associated intranet site (VanNet) in August 1997.

Just over a year later VW&R began to explore the concept of a "virtual" distributor. This led to the launch of their eBusiness Partners site in March 1999, making VW&R the first chemical distributor to allow online order entry. A few months later, Vopak decided to draw from the entrepreneurial talent at both VW&R and Vopak to found ChemPoint.com and make a play in the small-volume, specialty-chemical space. Edward Lux, Director of Technology and Operations, came to ChemPoint from the logistics business of Vopak. He described the birth of ChemPoint as the following:

Vopak is a company with lots of history – in 1620 when the Mayflower sailed, Vopak was 4 years old. They have always been looking for where to be next. They were one of the first to get the telephone, but realized it was of little value until others got one. As the Internet became popular for ordering books and toys, we asked ourselves, 'what would happen if we e-enabled chemical distribution?' That thinking led to the ChemPoint experiment. ChemPoint allowed entrepreneurial, internal talent to take a chance and make a break from a traditional company. You can hardly imagine the enthusiasm of our team, even without any promise of a high-flying IPO. Our 50 people are extremely excited about the business we are building and yet we maintain a great relationship with Vopak.

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## **ChemPoint Offers Online Distribution of Specialty Chemicals**

ChemPoint.com was founded in May of 1999 with the mission of bringing electronic trade to the specialty chemical industry. On March 6, 2000, after nine months of development, ChemPoint's web site went live with the ability to make transactions. ChemPoint took advantage of its sister relationship with VW&R and entered into a third-party logistics agreement with VW&R allowing access to their network of more than 130 facilities in North America.

The idea behind ChemPoint was to solve a mismatch in the \$70 billion (less than truckload) specialty chemical industry. Traditional chemical manufacturers spent the majority of their time selling the 20% of their customers that generated 80% of revenue. The remaining customers, while profitable, got little attention. Yet many companies were unwilling to forego this revenue simply because it didn't fit into their core business model. ChemPoint went to those manufacturers and offered to develop that channel for them – to be their sales and marketing arm for low volume specialty products sold to small customers.

Tapping these secondary product lines had been tried before by other distributors, but never in a web-based model. Lux explained:

The power of the Web allows us to integrate into other companies systems to see what their inventories look like. 90% of the time we do not own inventory until we sell it, and even then we only own it for an instant – we sell it across the dock. When it hits the truck, it's owned by the customer. So, each time when a customer places an order, we send that order to the manufacturer saying there's a desire to buy. Then we actually buy it from them as we turn it over to the consumer. We have a negotiated price, a tiered pricing for volume, and some work-arounds for customers finding lower prices elsewhere. Our fees are in marketing services – finding the customer. It is a win-win! We build business for customers they don't have time for while making a good business for ourselves.

ChemPoint had four major characteristics that defined the business: 1) they independently targeted underserved product lines of large chemical companies; 2) they did no advertising or marketing of the ChemPoint name; 3) they had a completely web-based solution; and 4) they served their customers with knowledgeable Sales Specialists.

### **Target Specific Product Lines of Large Chemical Companies**

Rather than trying to make a play in markets already dominated by existing chemical distributors, ChemPoint focused on low volume products that were not the central focus of a chemical manufacturer or distributor. Lux described the process for targeting chemical manufacturers and distributors as the following:

Large chemical companies spend almost all their sales time on the large customers and fast moving products. But they don't want to get rid of those small customers who purchase small volumes. Sometimes those same

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customers are large customers in other areas – they just buy small quantities of the specialty chemical stuff. In some cases, those products are by-products of the production process for the fast moving items. So it's kind-of like found money when you sell them. We come in and move those products that are underserved, allowing the company to focus on their core offerings while profiting on the low volume items.

### **No Advertising or Marketing**

Through knowledge of the industry gained from connections with Vopak and VW&R, ChemPoint targeted major chemical companies such as BASF and Rohm and Haas to find the underserved product lines. They then aggregated the products on the ChemPoint web site, supplementing the listings with product descriptions and information, as well as industry news.

Once they had established the product line they were targeting, ChemPoint used the supplier's existing customer list to drive traffic to the ChemPoint site. Explained Lux:

We have not been out advertising. In this industry, the web page was not built to help customers find us by typing "chemicals" in a search engine. We get lists of potential customers from the supplier, and go out and call people who are using the chemical. For example, working with a food color supplier, we called hundreds of ice cream manufacturers to see what types of dyes they are using. Our sales specialists are chemists, so when they find out that the manufacturer is using a synthetic dye, we tell them that we could supply a natural food colorant at the same price. Better yet, we remind them that moving to the natural food colorant would allow them to stamp "all natural" on their product. With our model we get a lot of buy-in. Once we have the customer, they place their orders on the web site, driving our marginal cost of capturing orders to zero! When we show them we can help their business, reduce their costs, and deliver on time, we get loyalty and sell other products. But it all starts with us - we're going out and calling them – rarely does a customer stumble on our site.

### **Electronic Solution Offered Ease-of-Use, Ease-of-Integration and 24-Hour Availability**

ChemPoint used Internet technology to facilitate the process of selling underserved specialty chemical product lines. This opened up the doors to services – such as purchase convenience, customer history, and small orders – that were not offered by companies who had previously tried to serve this niche. The ChemPoint web site described their offerings in the following way:

You can place orders, track status and download valuable product information 24 hours a day, seven days a week. And, you can place orders through the Internet, via phone or fax, or directly from your system with

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EDI or XML. ChemPoint.com provides customized product pricing and quote sheets for frequently purchased items, and you can buy chemicals – even in small quantities – which have been previously unavailable online or through traditional distributors.

**Added Lux:**

Customers are attracted to the concept that we have web capabilities – even if they don't use it, it's attractive to them that we have it. They look at us as IT savvy because of our Internet capability. We can communicate with our customers using various channels, regardless of their level of technology.

**Sales Specialists**

The characteristic that Lux felt was most important to ChemPoint's success was the use of chemical engineers, chemists, and chemical industry specialists to serve the customers. Rather than traditional Customer Service Reps (CSRs) handling calls and working with clients, ChemPoint employed Sales Specialists who understood the industry and could offer accurate, knowledgeable advice to when a customer called. Explained Lux:

A lot of people have tried to do this in a traditional telesales environment, but it's hard to go talk to someone about specialty chemicals if you have an entry-level employee being paid \$8 an hour. Other companies have had people who didn't understand chemistry trying to explain why to use a new food colorant. The person on the phone didn't have any idea why the customer would use the new chemical. They were order takers who didn't know the products and the chemistry. By bringing in industry specialists, we can do telesales with highly knowledgeable people in the industry with a higher level of efficiency that ends up reducing cost.

On their web site, ChemPoint described the knowledge and availability of the Sales Specialist:

Your dedicated Sales Specialist understands your business needs and ordering preferences, and is available by telephone or e-mail during regular business hours, or by Web message at any time.

**Developing an IT System**

ChemPoint's business proposition hinged on the availability of both traditional data about customers and products, as well as new information needed to manage the transactions throughout the supply chain. These data needs had to be available to create an electronic version of chemical distribution. For ChemPoint, the necessary data included: a catalog of products, a customer database, financial information and transaction data (see Exhibit 2). Yantra was brought in to serve as manager of the transaction data related to order fulfillment.

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## Mapping Information Flows

As ChemPoint was forming, the executive team sat down to discuss the goals of the organization. Ed Lux described the process as a mapping of the information flows needed to run the business:

If you're building a business plan from the start, you lay out your flow sheet and find out what information has to flow where, and you isolate similar areas and figure out what applications will fill those needs. We needed to look at the process we'd go through to create the desired result. We started with our business proposition in underserved product lines in the specialty chemical industry, and then we figured out what information we needed to get it done. We asked questions such as, 'Do I need a finance application? An e-commerce platform? A data warehouse?' As we looked for a technology solution we needed to figure out what was smoke and mirrors versus actual integration.

## Selecting Vendors

Having established their technology and data needs, ChemPoint turned to Lante Corporation, an eMarket consultant and IT integrator, to help them make their final technology decisions. The six-week design phase began in September 1999, followed by a 19-week build and implement project.

ChemPoint's internal systems were built on a best-of-breed basis with a focus on four major areas: Financial, Customer, Catalog, and Transaction. The final solution had customer data managed by Customer Resource Management (CRM) software from Onyx; production information managed by a cataloging system from Interworld, and the financial information managed by a system from Great Plains. Yantra served their transaction management around order processing, integrating the other three packages around the order.

## Yantra Corporation

Yantra Corporation was founded in 1995 as a spin-off from Indian-based Infosys, a multi-billion dollar software company specializing in IT development and consulting. At that time, Devdutt Yellurkar had been working for Infosys in the US for six years. Like many software service firms, Infosys had been very successful working directly on client systems problems, but had not been successful developing its own products. Devdutt saw the growing opportunities surrounding the management of order fulfillment and convinced his managers in India to create a separate organization to develop products in that arena. He found Yantra in 1995 as a 100% Infosys owned subsidiary to develop warehouse management system products.

As ecommerce began to gain momentum in the mid nineties, Devdutt saw that the products they were developing for warehouse management could be applied to management order fulfillment for ecommerce. With the support of Infosys, he pursued this vision, going outside

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the company for funding in 1997. His vision of developing a software solution for managing high volume transactions across the extraprise, captured the imagination of both customers and investors, drawing \$70M in investments from group of leading firms including Charles River, Morgan Stanley, and Accenture (formally Andersen Consulting).

Over the course of five years of development and customer success this solution had developed into Yantra's flagship product, PureEcommerce. PureEcommerce was designed with XML messaging technology that was highly scalable, interoperable, and specifically designed to accommodate different business rules and workflow requirements. In 2001, Yantra's customers included some of the leading e-businesses, manufacturers, and retailers on the Internet, including Fortune 500 manufacturers such as Honeywell and Motorola; retailers such as Hallmark; and trading exchanges such as Vertical Net and ChemPoint. PureEcommerce helped all these companies capitalize on the promise of e-business.

Mark Simmonds, Director of Product Marketing at Yantra described the migration of Yantra from a b2c to b2b focus as the following:

We found that 80-90% of all b2b orders change from initial order to delivery, and our goal was to have the customers drive this change. In developing Yantra, the big value proposition we saw was that b2b order management problems are more expensive and more complex than b2c. And there was no one serving that need.

By March 2001, Yantra had 300 employees, 70% of whom were in the Acton, Massachusetts headquarters with much of the balance residing in a software development office in India.

### **Beyond Acronyms**

Traditional enterprise systems, including enterprise resource planning (ERP), customer relationship management (CRM), and enterprise application integration (EAI) were designed to function within the four walls. Yantra's proposition was to go beyond what technology providers such as SAP, Baan, and homegrown applications offered and incorporate the next tier – whether it is customers or suppliers – in the supply chain in the technology solution. And in the complex world of acquisitions, upgrades, and new partnerships they believed a web solution was vital to integration of these disparate systems (Exhibit 3).

PureEcommerce functioned internally as an aggregator of data from diverse sources, served the suppliers as a portal for tracking and shipping orders, and linked to the front-end web page where the customers placed orders. Dave Porter, Product Manager at Yantra explained:

The portal is the interface for anyone who needs information on a customer transaction. For example, if I'm selling DSL modems online, I'm selling more than just a modem – I might need to coordinate installation when someone takes an order. The portal can notify other parties involved in relationship – other components of after-market sales. Alternately, if I'm a company that sells servers to a customer, and I'm on the hook for fixing anything that goes down, I want to make sure I can coordinate service with

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parts that are needed. Any of these suppliers can be linked to the portal, and notified when a customer request comes in.

Yantra is about how you interact with customers and suppliers. Firms are starting to focus on the extraprize – solutions that reach outside the company to links in the supply chain. Supply chain solutions of the past will not be sufficient. You will need to have transaction management, including inventory, sourcing, etc. – a business ecosystem. The company that beats the competition will be the one who can assemble the best network of supply chain partners and execute on that better than their partners. We've designed our solution to be a core part of that environment. The initial emphasis was on the front end – how to build these connections to suppliers and dump information into fulfillment apps – there will be a layer between front-facing and fulfillment that will allow companies to bring in other participants.

Traditional EAI tools were designed to extract data, translate it to other formats, route messages, and monitor the messaging process. Yantra went beyond this and other tools by maintaining historical order information, providing exception management and inventory management, allowing for dynamic sourcing, and offering complete supply chain visibility.

### **Yantra Functionality**

Yantra's offerings were broken down into five major categories: 1) internal resource management; 2) supply chain visibility; 3) workflow management; 4) transaction and exception management; 5) integrated solution.

*Internal resource management offered a single view of the customer.* Yantra offered the capability to add and integrate multiple customer channels internally. CSRs on the phone could pull up a history of web orders, leveraging data across multiple channels and business units.

*Visibility into the extraprize streamlined the supply chain.* Yantra allowed companies to add and integrate complex extraprize participants. As companies developed, they could expand their supplier base to support broader product and service offerings. Additionally, Yantra had virtual inventory management capabilities, and could provide a global inventory view to drive more informed decision-making. When working with Hallmark, Yantra ran their flowers business and provided visibility down to the stem level. Yantra helped Hallmark manage a complex process where they needed to know if the flowers would be available on time, and how soon flowers in the inventory would die.

*Business rules helped to manage workflow.* Yantra managed complex workflow and business processes, which allowed firms to customize and personalize transaction processes for various supplier and buyer relationships. Clients could create multi-step fulfillment rules and allow seamless order modifications.

*Transaction management and reporting aided in business planning.* Yantra could manage the complete transaction lifecycle. This included order creation, dynamic sourcing,



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fulfillment, and returns. Firms could automate monitoring and response to exceptions and share necessary information with all trading partners and service providers. Additionally, Yantra's analytics and reporting capabilities allowed companies to track transaction information to use in future development of supplier relationships, or in better targeting customer segments.

*Technology offered interoperability with other systems.* Because they used cutting edge technology, Yantra's solution was designed to meld with other companies' systems. Yantra's PureEcommerce was an Internet-native application utilizing Java, XML-based technology, and an n-tiered architecture. It could be integrated with existing ERP or legacy systems, and it was scalable to handle the high volume requirements of the largest corporations – it was tested to handle 100,000 orders per hour, which exceeded Amazon's 2000 Christmas volume. And because of this advanced technology, it could be implemented rapidly, typically in three months or less.

## **Yantra at ChemPoint**

The focus of Yantra in the ChemPoint solution was to offer transaction management and a view into the supply chain. ChemPoint supported a wide mix of suppliers, many of whom use third party warehouses and a range of shippers. The process began with an order. Whether the order arrived through the ChemPoint website or was input by a customer service representative for orders arriving by fax or phone, it found its way into the work flow engine of Yantra.

The first action was allocation. Sometimes a product was tied to specific seller, but if it was a commodity product, business logic such as price and availability was used to select between suppliers. The order was then passed to the appropriate supplier for review and acceptance. Typically, the supplier was notified by email that a new order was waiting.

Yantra's portal allowed ChemPoint's suppliers to pull down order information targeted at them, including buyer and shipping information, and the quantities ordered. Some suppliers maintained real-time contact with ChemPoint while others chose to review their orders in a daily batch mode, processing all of the waiting orders at one time. Upon entering the portal, the supplier first reviewed the orders, accepting each item ordered. Yantra allowed suppliers to respond to order requests by making line-by-line responses to availability, or accepting the complete order. If the supplier could not supply any part of the order, due to inventory shortages or for other reasons, Yantra would process the exception and notify the appropriate ChemPoint managers. This provided ChemPoint with the timely information needed to work with other suppliers to fill the missing components of the order.

After accepting the order, the supplier would print a pick list, shipping labels, and other related order documentation. With each transaction, Yantra updated the status of the order – for example as “accepted by supplier” or “order being picked.” After the ordered items were loaded onto an outbound truck, the supplier entered the carrier name (such as Yellow Freight) and related shipment information including a shipper tracking number. Again,

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Yantra updated the order status, allowing both ChemPoint and the customer to see that the order had been shipped, the carrier involved, and the shipper's tracking number. In cases where the carrier maintained its own tracking system, the customer could click on the related hyperlink from within the ChemPoint website to track the shipment status of the order.

The supplier finished their part of the process when the shipping information was entered. An invoice was created that would match up with the ChemPoint order, and since ChemPoint often didn't own the inventory, they generated a PO to buy the inventory, then they matched it up within the financial system with the invoice from the supplier. The Yantra system would pass this information back to Great Plains, the financial application. As soon as the order was confirmed within the Great Plains system, PureEcommerce was done with the order.

Jerome Dubois, an implementation consultant at Yantra who worked on the ChemPoint integration, described the roles of the various applications that worked together in this process:

Yantra sees the customer only when an order is created, either through the CRM or e-commerce application, Onyx and Interworld, respectively. Yantra's role is as order master and inventory master; Onyx is the customer master and Interworld is the catalog and product master. A broad ERP solution would hinder workflows and integration would be complex. This is a much more streamlined approach.

The value that Yantra provided to ChemPoint was the ability to extend out the workflow and add transactions and events. The workflow is how an order gets processed – it's a set of statuses and transactions that drive the order and a means of reporting the progress of the order. For example, during allocation, we decide which internal supplier should get the order allocated to them. You could have any business rules there. ChemPoint could assign multiple sources for each product, but their map of suppliers was not that complicated in most cases.

One of the strengths of our product is the flexibility with the rules of the workflow. Different clients can have different sets of steps to follow in the ordering process. For ChemPoint, one of the values they can provide is optimization of an individual buyer/supplier relationship by offering specific services within that relationship.

For most of ChemPoint's suppliers, the small volumes shipped made the manual process of checking email and logging into the ChemPoint portal the most economical solution. Of course, the Yantra solution facilitated direct integration into a supplier's ERP system, through EDI links or XML. However, few suppliers were ready to make the \$20,000-\$100,000 investment in such integration until the ChemPoint volumes grew.

For example, a large firm like BASF was excited to have ChemPoint work with the many small customers that comprised a small fraction of their revenue base. ChemPoint processed

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those orders, and let BASF know when those orders were ready to be processed. Together ChemPoint and suppliers agreed on reasonable turnaround times for acknowledgements of orders and turn for shipping of stock, but ChemPoint's Yantra solution allowed the suppliers to process orders when it was most convenient for them.

In some cases where the suppliers were resistant to using ChemPoint's portal, ChemPoint personnel would phone or fax the order to the supplier and input many of the order tracking steps, such as supplier acceptance and shipper information, themselves into the portal. Ed Lux of ChemPoint lamented that the Chemical industry was exceedingly slow to adopt new technology and suffered from order fulfillment problems. Analysts agreed that the industry faced widespread order fulfillment defects such as lateness or the wrong items shipped. ChemPoint realized that to be successful they would have to build systems that allowed them to handle many alternative order taking and supplier processes.

Yet regardless of whether the order was taken by phone or the supplier was faxed the order, ChemPoint processed each step of the order through the portal. This allowed them to use the Yantra system for order management, but more importantly, to prove the concept to old-fashioned suppliers and customers. As of March, 2001, Ed estimated that only about 25% of ChemPoint's supply chain transactions were being conducted exclusively over the Internet. However, he was convinced that as ChemPoint developed and became established with their customers and suppliers, that number would grow.

Yantra was bringing together a diverse set of internal applications that were vital to ChemPoint. They were offering visibility and electronic capabilities that didn't previously exist. ChemPoint had few direct competitors because they were in such an undeveloped space. Said Ed Lux:

We're seeing small, specific organizations popping up, such as paintings and coatings – industries with a specific bent. These are huge markets in themselves, but that's the only place we're seeing competition – from vertical plays within the chemical space. And in most instances we're not competing with traditional distributors.

We're not trying to sell the name – we don't mind having the name out there, but since this market is so easily emulated, we want to get a good grasp into the market because some other players could change goals and go into our market.

## **Managing the Extraprise and the Race to the Motherboard**

With successes like ChemPoint, Yantra was eagerly pushing ahead to exploit the vast market of companies struggling to integrate their supply chains. With technology and customer demands rapidly evolving, the landscape for extraprise integration was at the same time exciting and fraught with uncertainty. Competition for supply chain integration came from every corner (Exhibit 4). Large ERP vendors like SAP and Peoplesoft, were feverishly working to make their products web-savvy and supply chain spanning. Supply chain

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planning vendors such as I2 and Manugistics were aggressively migrating from planning to execution roles, with offerings in business exchange infrastructure development enhanced with supply chain planning tools. Then there were many new firms boasting web-centric approaches to integration of existing application such as Webmethods and Extricity. These firms were beginning to offer application services on top of their integration frameworks. Finally, within the best of breed pure Internet solution providers, players were all looking to assemble more parts of the total solution. For example, e-commerce players such as BroadVision and Blue Martini weren't yet offering supplier integration, but they were well positioned in the enterprise to begin looking in that direction. CRM providers such as Onyx and Siebel were also limited in scope beyond their core focus, but moving from customer data to transaction was certainly a possible strategy.

Where was the future of supply chain integration? Would Yantra be a solution or a part of the mix? Forrester Analyst Navi Radjou saw the future of supply chain software moving to a network model that would necessitate a shift in focus for Yantra:

Moving forward, providing visibility into product chains with only a few steps in the process is going to be relatively straightforward, but a chain with multiple steps will be harder. Industries such as apparel and high tech will need more functionality. Yantra competition is not from other supply chain application vendors, but from b2b integrators like WebMethods or Viewlocity who can integrate their solutions with back office systems. Plugging into multiple manufacturing plants is going to require massive amounts of integration.

These vendors are taking the bottom up strategy of targeting the low hanging fruit of integrating systems and moving up the stack to the application layer. Yantra is starting at the software layer and needs to address the complexity of integrating across multiple manufacturing partners.

Another important aspect of the supply chain application market is the role of business process re-engineering (BPR). Companies need to change processes rather than just put software on top of inefficient processes. The success of these applications relies on redesign of specific business processes, so Yantra would benefit a lot from working with integrators with robust BPR practices.

Devdutt believed that Yantra was well positioned to become the SAP of the extraprise. He explained:

The ERP vendors are saddled with old technology and an old view. They were aligned with the enterprise when the world shifted from an enterprise to an extraprise view. Now they are trying to change in mid-flight. We started with the extraprise view and we built for the web. We proved the concept and have the tools to manage transactions throughout the supply chain. Now it is time to put it all together. It is just like the 'race to the

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motherboard' in PC design. Remember in the early days of PCs, each new feature, like sound and video, came on a separate printed circuit board sitting in your PC. As the technology matured, those bits of technology were all incorporated onto the motherboard.

The same will be true for us - and we have two choices. Either become the assembler of solutions or be acquired by others who are the assemblers. We are truly at a unique moment in time and if we can execute, we can become the SAP of the extraprise. The big guys are too slow and the little guys are out of cash. My job is to maximize shareholder value, but I didn't found this company to be acquired. We have the cash and we have the vision to put it all together.

### Case Questions

1. ChemPoint was a great application for Yantra because they were greenfield (b2b) e-commerce and web-native. How well would Yantra fare in a more complex, established company? How do they fit into the big picture of supply chain management? How can they leverage their transaction management component?
2. Devdutt argued that Yantra's success in order transaction management well positioned them to become the assembler of a complete solution. Of course others, such as sell side focused BroadVision and Interworld, CRM players such as Onyx and Siebel, or financial players could become the "assembler." Which type of player is most likely to be successful as an assembler?
3. Should we count large ERP vendors like SAP out? What about integration players like Webmethods and Extricity? Are any of these players likely to become dominant in extraprise management?

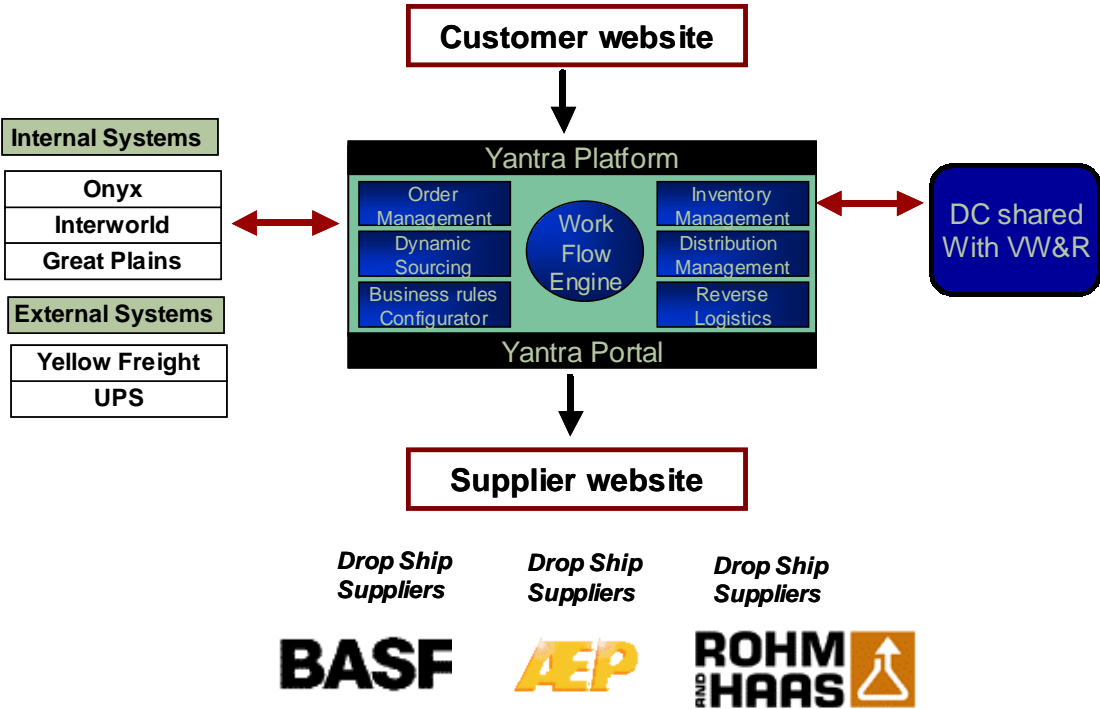
**Exhibit 1: Transaction History PureEcommerce is Capturing for ChemPoint**

customer_name	Bob Jones		status	description	created	modified	Length
company_name	Superior Dairy		1100	Await Verified	20:02.0	36:20.5	
ship_to	335 Couch St		1100.100	Verified	36:20.0	42:33.9	
	Loading Dock		3200	Released	42:33.0	44:24.4	
	Marshfield, WI, 44667		3300	Await Supplier Confirm	42:33.0	51:03.7	
supplier_node	15721		3300.001	Supplier Confirm	51:03.0	54:34.4	
order_no	2565		3300.004	Ready to Ship	54:34.0	57:10.0	
item_id	110082		3300.005	In Process	57:10.0	57:37.9	
item_description	Annatto Food Color		3700	Shipped	57:38.0	57:38.0	37 minutes
status_quantity	1						
personalize_per_line	0						
handling_per_line	0						
shipping_per_line	0						
other_charges	0						
line_total	820.89						
tax	0						
scac (shipper)	YSFY						

**Work Flow Process for a ChemPoint Drop Ship Supplier**

Steps	Performs step	Order status	Hr:Min:Sec	Steps Performed
1	CSR	Beg Await Verif	0:01:00	Order appears in CSA Queue. Reassign incident to staff
2	CSR		0:00:30	Insert Market Developer and/or Sales Specialist as an internal contact in the incident
3	CSR		0:00:09	Check company record in Onyx for credit approval.
3a	CSR		0:01:00	If credit has not been checked notify Market Developer
3b	CSR		0:01:00	Credit information goes to Accounts Payable for check and approval.
3c	Mkt Devlp		0:01:00	Market Developer sends out email to "ChemPoint All" announcing sale
3d	Accts Payable		0:01:00	Create a "Credit Information" service incident in Onyx containing the credit limit, any pertinent
4	CSR		0:04:00	Check customer quote in Onyx to verify freight carrier – carrier listed in "Alt. Freight Carrier"
a.	CSR	End Await Verif	0:02:00	<b>If carrier exists in Yantra, change order from Yellow (default) to proper carrier</b>
5	CSR	Verified	0:01:00	<b>When credit is approved, change the status of the order in Yantra to "Verified"</b>
6	CSR		0:06:50	Fill out order form ( <b>see sample form</b> )
7	CSR	Released	0:01:00	Phone, <b>email</b> or fax supplier contact to place the order
8	CSR		0:05:00	<b>Have to wait 5 minutes at the most before status changes from released</b>
9	CSR		0:02:00	Notify the Market Developer and/or Sales Specialist via Onyx Messenger
10	Supplier/ web	Await Confirm	2:59:00	Supplier visits website, See's await <i>shipper</i> confirmation status
11	Supplier/ web	Supplier Confirm	0:02:37	Supplier checks availability, changes the status of the order <i>from "New" to "Accepted"</i>
12	CSR	Ready to ship	0:07:00	<b>Change the status of the order in Yantra to "Ready to Ship"</b>
13	Supplier/ web	In Process	1:03:00	Change the status of the order on the Supplier web site to "Pick/Pack".
a.	Supplier			The lot number (or numbers) for each product
b.	Supplier			A certificate of analysis for each lot number converted into a PDF document format.
14	Supplier/Jeri	Shipped	0:00:00	Change the status of order on the supplier web site to "Shipped".

**Exhibit 2: Solution Architecture**



**Exhibit 3: Interacting with Yantra**

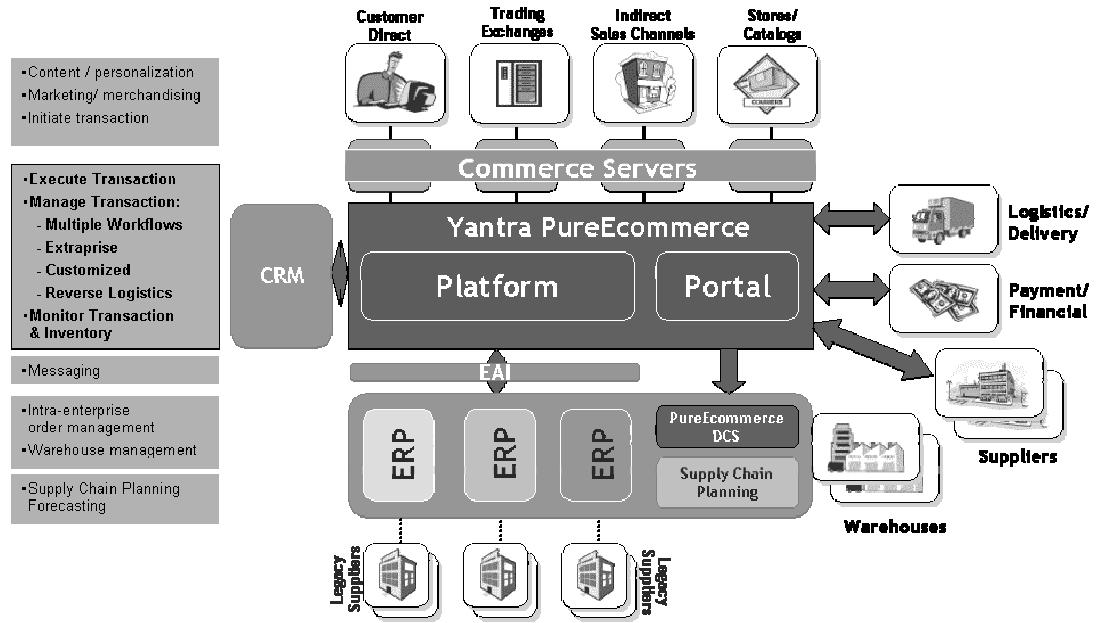




Exhibit 4: Competitive Landscape

