

The Promise of Value Chain Optimization

There has been a tremendous amount of information disseminated within the past six months regarding how the Internet will change everything you do, if it has not done so already. The reality is that while the change effected by the Internet has been in the form of a truly enabling technology, it is still incredibly difficult for the average business executive to discern what all this change really means and how best to leverage it. There are a few basic tenets that all business executives must grasp or risk being overrun by better-adapted competitors.

Seller Beware

The first tenet is clearly the shift in the balance of power in the buyer-seller equation. Historically, large marketing organizations thought they knew better than the customer what the customer wanted – or at least that is the premise upon which they operated. Companies manufactured new items (or new and improved items) and pushed them through the channel, sometimes rather forcefully, to buyers who had little choice, but to buy them. What consumers desired was not the most important factor to the majority of these companies. What was important was what you were selling to those buyers. However, any marketing student can tell you, if you do not listen to your customers and sell what they want, you will be out of business very quickly. In a few years, buyers will hold all the cards (those that they do not already hold). Customers have little tolerance for problems and if problems do occur, they expect prompt and thorough resolution. Customers also expect choices in product categories. This has led to customization efforts on the part of those companies that are listening to their customers. The bar has been raised in every facet of customer expectations. Companies that do not realize this now are already on their way to extinction.

The central theme surrounding the buyer-seller shift in power is that buyers and sellers now have a tremendous amount of information at their disposal. Buyers use this information to find the products that they want, or, put another way, to bypass organizations who do not provide the exact products that they want. Effective

selling organizations use it to provide the right products to their customers at the right time (remember this concept, as it will be revisited). The selling organizations that will survive are those who leverage the power of the Information Age to learn exactly what it is that their customers do want.

The good news is that the tools to accomplish this customer intimacy are available. There are a multitude of applications and services on the market today to assist companies in managing customer interactions, recording and accessing buying histories, and targeting customer needs based upon these interactions and buying histories. Companies can leverage technologies such as personalization, collaborative filtering, sales configuration, voiceover IP, and real-time support to serve their customers. Effective Customer Relationship Management (CRM) is no longer just a tool to enhance sales and marketing efforts; it is an absolute must for the continued success of any organization. Not knowing your customers is a guaranteed recipe for failure.

The shift in power to the customer has exposed one glaring problem in most business organizations: they are incapable of handling the demands placed upon them by a value chain driven by customers as opposed to the traditional marketing-driven chain. In the immediate future, this shift will be the major point of differentiation between those organizations that will thrive and add value to their customers and shareholders and those that will falter. Companies that are able to leverage the power of the Internet across their value chains will become the leaders within their industry cate-

Ted Culotta is a senior manager in product development at Electron Economy. Prior to joining Electron Economy, he worked in transportation and operations management at Ryder Integrated Logistics where he implemented and managed operations for such clients as Pacific Bell, Apple Computer, Hewlett-Packard, Acer, and Komag. He has also held positions at United Parcel Service and Airborne Express, and he is currently working on a book about railroad freight equipment constructed during WWII.

gories. The importance of good customer information provides companies with some of the raw materials for effective value chain management, but the actual work lies in other parts of the chain.

XML: Putting Everybody on the Same Web Page

One of the most important developments in the Internet era is the adoption of XML (Extensible Markup Language). XML promises to do for business communications all the things that EDI (Electronic Data Interchange) could do – plus many things it could not. EDI's deficiencies were many, but two key shortcomings led to its failure to be universally adopted. Its transaction-set standards were very rigid, requiring much customization by nearly each and every trading partner. This customization eliminated the benefits associated with a common communications tool. Customization made the exact transaction-set different among trading partners so that even the common denominators in EDI were "uncommon." The other major drawback was cost. Transactions had to be routed through Value Added Networks (VANs) before being sent on to the recipient of the message. VANs resulted in EDI being costly for all except the largest users. Due to the complexity of custom mapping for transaction sets and the high cost of sending messages, EDI was doomed from the outset to be a niche solution. However, the groundwork laid by EDI is what has enabled the "XML Revolution."

XML has conquered the drawbacks of

EDI. In contrast to EDI's rigid transaction formats, the XML standard is extremely flexible in terms of formatting, which has made it infinitely easier for trading partners to adopt it for information exchange. Small trading partners without large IT departments can use XML as easily as Fortune 500 companies because of XML's flexibility. In addition, the cost of communication when using XML is markedly lower due to usage of the Internet as the communications vehicle, as opposed to VANs. XML's appearance on the business communications stage and its inherent advantages over EDI have fostered the ability for all trading partners to communicate across a value chain, not just those with large IT staffs and budgets.

The widespread adoption of XML has led to the most important change in the evolution of the value chain: integration, integration, and yet more integration. Integration is the first key to creating inter-enterprise value chains. Many of the software advancements made throughout the last decade have been enterprise-centric in their scope. They have helped companies manage their internal operations across multiple disciplines, such as human resources, finance, and manufacturing. The giant ERP implementations of the 1990s, such as SAP, Oracle, and PeopleSoft, have clearly revolutionized the way companies manage their internal operations. ERP packages assisted companies in taking the first steps toward value chain integration. Through EDI communications, firms were able to crudely link their systems with those of their largest and closest trading partners. Unfortunately, due to the constraints of EDI, companies that had invested in ERP solutions could not completely disseminate information to trading partners.

Enter XML. Within the past couple of years, an entire industry subset has developed around the need to integrate disparate systems, both internal and external. There has been a wave of new Enterprise Application Integration (EAI) providers to assist companies with the XML-based integration of their own internal ERP systems, as well as integration with trading partners' systems. XML is proving to be the perfect

medium for these integration efforts.

To Get the Big Picture, You Need to See Every Detail

Companies are gaining an all-encompassing view of their operations. With the integration of ERP systems, sales and marketing information can be automatically transferred directly to the back-end systems that manage the operations of a company, such as manufacturing and procurement. Difficult tasks such as demand planning have been dramatically eased as an enterprise-wide view of all corporate functions is constructed.

While this enterprise-wide view has provided business executives with previously unavailable information for decision support, it remains an evolutionary, rather than revolutionary, step in the advancement of the concept of an inter-enterprise value chain. To ensure success, companies will need to create an integrated view of all the constituents that comprise their value chain, from the smallest raw materials suppliers to the point at which goods arrive at the end consumer, be it business or retail. The enablers for this inter-enterprise wide view are already in place and currently executing this task. They are many of the same EAI providers that integrated internal ERP systems.

The integration of an entire value chain represents the foundation for the revolution taking place in value chain management. Once all the partners in a value chain are integrated, the participants in the value chain have all the integral information they need for effective business decision-making. It may appear that companies have acquired all the necessary tools for decision-making capabilities across their value chains. However, simple integration is merely the enabler, not the solution.

Integration of all the partners in a value chain is not the silver bullet to all the objectives of today's business executives, such as higher inventory turns, build-to-order (BTO) or configure-to-order (CTO) sales channels, automatic procurement and replenishment, inventory-less manu-

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facturing, and supply chain optimization, just to name a few. While all of these functions, and more, are improved by integration, they are not revolutionized. Essentially, integration alone represents the same state of affairs, just at a faster pace. There needs to be something else to drive true value into the value chain.

Value Chain Management: An Intelligent Framework Open to Everyone's Input

The revolution in Value Chain Management (VCM) will come not from integration, but intelligent execution based upon the enabling capabilities that integration provides. The giant leap forward will occur when firms take all the data available throughout a value chain and execute business processes using an intelligent system. Put differently, integration is really a messaging architecture to relay data about disparate trading partners in a value chain. The leap will come when intelligent business systems outside the value chain constituents' internal systems, but connected to the value chain, make decisions that optimize the entire value chain. This leap can be thought of as systems that optimize not the discrete enterprises or units within a value chain, but the entire value chain. Value Chain Optimization (VCO) enables dynamic, real-time execution across all participants to continually "tune" all operations.

The drivers of VCO will be the customers at the head of the chain. It will also be the goal of VCO to ensure that every customer demand is met. Each player in the value chain will be concerned with the happiness of the end customer. All players in the value chain will know who their real customers are, not just the next company in the chain to whom they ship their products. Only in this way can a truly customer-centric, responsive enterprise be constructed.

This new paradigm will require many companies to retool their thinking about their partners. Issues of trust will be important, but the consequences of isolationism are too great to prevent intimate value chain relationships. All sales information must be shared among all constituents in the value chain. This "perfect" visibility

will elevate demand planning to previously unseen levels. Imagine how efficiently chains will operate when every supplier sees in real time how effectively the products to which they supplied components or materials are selling. Marketing, manufacturing, distribution, procurement, and a host of other functional areas will all operate in a dynamic environment of "perpetual optimization."

Perpetual Optimization

To enable this value chain optimized world, new applications will need to be deployed to handle these new tasks. At the highest level, an intelligent system must be in place to monitor all facets and functions of the value chain. New information from the sales end of the chain needs to be captured at point of sale and quickly integrated into the system and disseminated to all partners. Updates from all the trading partners about their operations must also be disseminated to the chain in real time. All of this information must be screened against the business rules for each partner, as well as for the business rules of the chain as a whole. These business rules will act as intelligent decision support mechanisms for the entire value chain. These rules will be applied and the value chain "re-calibrated" and re-optimized. This optimization will be occurring continuously, thereby ensuring that each participant in the chain is being directed to perform business tasks that optimize the entire value chain.

This intelligent system to manage the operations network will function like an enterprise-wide Decision Support System (DSS). Laid across the entire value chain is an intelligent business rules-based operations network, capable of fine-tuning and optimizing the entire chain, "on-the-fly" in real time. Each time a change is made to the network (for example, an order of components is complete or a shipment is delayed due to bad weather), that new status is communicated to the intelligent system which then adjusts operations to react to the change and notifies the affected parties' systems and the affected parties themselves, if necessary. As conditions change,

business rules are modified in real time, either through the intelligent capabilities of the system or manually by a value chain partner, to reflect changes to operational processes. The result is a system that leverages the visibility provided by integration of partners, but layers it with capabilities to optimize all of the partners' activities to the benefit of the entire value chain and ultimately, to the value chain's end customers.

The Components of Collaboration

Below this inter-enterprise wide intelligent system, there will be systems to manage functions arising from the availability of data enabled by integration. Perhaps the greatest effect will be felt in the area of Collaborative Planning, Forecasting and Replenishment (CPFR). CPFR applications help to manage the integrated demand functions enabled by inter-enterprise integration. Broken down into its three core components, CPFR provides the following to a value chain: Collaborative Planning whereby the partners in a value chain combine their resources to map the future needs of the chain; Collaborative Forecasting where the partners in the chain forecast collectively to ensure that all constituents can be planning against the same targets, thereby dramatically improving the efficiency of the entire value chain; and Collaborative Replenishment, which takes the shared knowledge of the value chain to enable partners to replenish against more accurate forecasts and real-time consumption data. CPFR provides a means to integrate all partners in a value chain for the goal of a cooperative approach to forecasting business and keeping value chain operations lean. CPFR will eliminate the problems we have all witnessed where a poor marketing/demand projection is sent to partners, resulting in inefficiencies throughout the chain, such as too much or too little inventory. With the integration of effective real-time sales data throughout the value chain, CPFR leverages that sales data to continually help value chain partners refine business plans and operations. CPFR trims a tremendous amount of fat out of the supply chain by

ensuring that all parties are operating to the same plan.

CPFR, in conjunction with the intelligent DSS capabilities of the network, will provide a new level of efficient resource allocation. Value chain partners can expect better information to furnish a host of benefits. Human resources can be more effectively scheduled and managed through far-improved information about manufacturing and operating schedules. Procurement can be effectively automated, both on an existing contract basis and through such enhancements as dynamic procurement using connections throughout the partners' own value chain and other connected value chains. Partners will also enjoy the ability to procure dynamically from the multitude of existing and future horizontal and vertical business-to-business (B2B) marketplaces. Use of transportation resources can be improved in several ways. Capacity can be scheduled more accurately in advance of its actual usage. Optimization can occur among many trading partners to collectively use resources and drive down unit transportation costs. The onerous task of managing carriers and paying bills can be automated throughout the network. Transportation moves will be visible to all partners, removing uncertainty. Financial transactions surrounding value chain activ-

ities can be conducted directly with partners, including financial services providers who will be a part of the network. These are a few examples of how VCO promises to deliver the dream of a truly collaborative network.

One question many business executives will face is what to do with their considerable investments in the previously mentioned ERP systems. Continue to leverage them. Much of the information delivered to the intelligent network will be enhanced by existing ERP systems before being disseminated to the value chain. The value of these ERP systems will not be diminished in any way. In fact, it will be enhanced by its inclusion in the value chain.

It's Not What the Technology Does - It's What It Does for You

How does a business executive begin to leverage the exciting opportunities that Value Chain Optimization affords? The first step is to conduct research. There are many, many solutions available in the marketplace today. However, the marketplace is in a true state of genesis. Analysts and the media often lump many companies into categories that misrepresent the true capabilities of a solution or provider. Due diligence is a must. It is of paramount importance to

understand truly the business need that a solution or provider addresses (not necessarily what the technology will do). To identify business needs, a great deal of introspection is important for a company before any steps are taken to find a solution that addresses the business need(s). A company's understanding of its own business requirements should always be the precursor to any assessment of technology solutions. Technology enables business process management; business should not enable technology. Additionally, the solution itself must be examined, not the marketing message of the provider. The solutions are very complex technologies designed for very complex problems. The weight given to their research should be just as complex. The best advice is simple: research before executing.

Value Chain Optimization, when practiced effectively, will do what every company has been attempting to do since businesses were first invented: Deliver the right products, to the right place (or customer) at the right time at the right cost. Collaboration across an entire value chain, with an intelligent system to manage the constant flux of inter-enterprise operations, will deliver on this goal.

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