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Supply Chain Management

An initiative of:

business infosource
Canada - Saskatchewan Business Service Centre

Funded by:

Western Economic Diversification Canada
Diversification de l'économie de l'Ouest Canada

Canada

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Business-To-Business (B2B)

Few business fads have peaked and plummeted with the rapidity of Internet technology, in general, and B2B e-commerce and e-marketplaces, more specifically. Energized by the success of consumer auction sites and by savings from early e-procurement efforts, industry exchanges took off in mid-1998. By the end of the year 2000 more than 1,500 e-marketplaces had been announced. They ranged from independent, multi-industry exchanges to vertical consortia led by industry giants, and most were aimed at direct, strategic materials. Business plans for these e-marketplaces often consisted of nothing more than a press release, but the visions were grandiose.

Then reality hit. As early as 1999, analysts began to warn that even the largest industries could support only a handful of e-marketplaces. It increasingly became clear that the path to value would be measured in years, not months. Helped along by the bursting of the Internet bubble and a suspicion of all things B2B, the creation of e-marketplaces slowed. Announcements of failures and consolidations replaced notices of new launches. However, research firms that closely watch this sector are far from writing off e-marketplaces or the B2B revolution. The Gartner Group recently revised its near-term projections downward, but still expects Internet B2B commerce to reach $8.5 trillion worldwide by the year 2005.

There is one significant change in the new projections—today, analysts are saying that much of this business, perhaps as much as 85%, will not go through public marketplaces but instead will be conducted over private marketplaces that cross a wide range of applications. Many say that there is little difference between the basic technology employed in public and private marketplaces. The only real distinction appears to be the model of participation. That model is one reason that private marketplaces offer a faster path to value. One-to-many (1:M) networks are easier to make work than the many-to-many (M:M) model of consortia exchanges that are predicted to offer no more than auction, spot-buy, and excess inventory services for at least the next two years. The real power of the private exchanges lies in streamlining existing relationships, including those with resellers, distributors, and logistics providers.

The Changing Face of Business

It was Ralph Waldo Emerson, the American philosopher, poet and essayist who wrote: "If a man write a better book, preach a better sermon, or make a better mousetrap than his neighbour, though he build his house in the woods, the world will make a beaten path to his door." Even if this were true a century and a half ago when Mr. Emerson expressed his views, a manufacturer would build an extremely large inventory waiting for today's market to beat a path to her door, whether her facility were located in the woods or in a modern industrial park. Today, a passive approach will not get a better product to market.

Following the traditional approach, no matter how good the product, the first step is to get the supply chain in order. Next, a business must hire a seasoned purchasing manager to aggressively deal with material and service providers so that costs can be brought in line. Then the enterprise must find dynamic sales and marketing personnel to drive finished product into the hands of the consumer. Tweak the system every now and then and watch while product flows out and profits flow in. That is basically how things have worked in the past; businesses maintain heavily push-driven, sequential supply chains, based on fundamentally adversarial relationships with their suppliers. Success hinges on outmanoeuvring, outperforming, and outwitting everyone perceived as competition.

Although this may be the traditional approach, it's not the only way. A lot of forward-thinking companies are beginning to look at an approach that defies convention. The new approach involves making allies of suppliers and customers alike, embracing them in value nets instead of coercing them into precarious supply chains. Many consider this the next evolution in the supply chain. This emerging value net business model starts from the premise that a better product is no longer your ticket to success, but merely your entry fee into the game. In fact, if a business puts a better product at the centre of its efforts, this strategy demonstrates that the company has missed the point of the value net approach altogether. The idea is to put customer priorities at the centre and design the value net around them. Moreover, it is important to recognize that customer priorities stem not from some amorphous group called the customers, but from individuals that have unique needs and wants.

Where the traditional supply chain would push out a fixed line of one-size-fits-all items, hoping that customers would buy them, the value net in contrast allows unique customers to choose product or service attributes that they value the most; in effect, to design their own product. Then the value net configures itself, its suppliers, its manufacturing services, and its delivery capabilities to meet the needs of each customer or at least of each customer segment. It differentiates itself to supply one-size-fits one or customized products for each customer or customer grouping. It leverages operations and customer choice to drive strategic advantage.

The Supply Chain

Traditional Supply Chain

The traditional supply chain often includes more than one company in a series of supplier-customer relationships. It is often defined as the series of links and shared processes that involve all activities from the acquisition of raw materials to the delivery of finished goods to the end consumer. Raw materials enter into a manufacturing organization via a supply system and are transformed into finished goods. The finished goods are then supplied to customers through a distribution system. Generally several companies are linked together in this process, each adding value to the product as it moves through the supply chain.

Effective supply chain management is the act of optimizing all activities throughout the supply chain, and it is the key to a competitive business advantage. Consequently, an organization’s ability to gain a competitive advantage is heavily dependent on coordination and collaboration with its supply chain partners. Yet, even today, a typical supply chain is too often a sequence of disconnected activities, both within and outside of the organization. To remedy this situation, it is important that an organization and its suppliers, manufacturers, customers, and other third-party providers engage in joint strategic planning and operational execution with an eye to minimizing cost and maximizing value across the entire supply chain.

Exchanging Data is Critical

The underlying enabler of supply chain integration is the fast and timely exchange of information between supply chain partners. This information may take the form of transactional documents such as purchase orders, ship notices, and invoices, as well as planning-related documents like demand forecasts, production plans and inventory reports. It is this sharing and coordination of information and planning activities that can enable cost reduction, value enhancement, and the execution of advanced collaborative planning activities.

In the past, the cost and complexity of executing electronic data interchange (EDI) transactions made this type of information exchange suitable for only the largest corporations. The ubiquity of Internet-based communication tools now makes it possible for organizations of all sizes to exchange information. However, challenges still exist and being able to successfully deal with all the new technologies is one of these challenges. The good news is that this data exchange challenge can be overcome; and the opportunities become endless once companies are able to exchange information efficiently with their suppliers, customers, and partners. Applications like vendor-managed inventory (VMI), collaborative planning, e-procurement, shipment tracking and tracing, electronic order management, and bill presentment and payment can be built upon a core data exchange platform, enabling companies to reap true cost reduction and service improvement within their organization.

Supply Chain Innovators

A recent magazine ad opened with the following headline, “Why lobster tastes better from a Web-based store.” A major maritime seafood supplier has been in the business of providing top-quality seafood to wholesalers and fine restaurants around the world for more than 25 years. The company decided it needed to expand its market base and begin offering its products to consumers to attract an untapped market via the Internet. E-commerce also allowed this supplier to automate the order taking process that was previously done manually, speeding up the process and wringing costs out of the system. Through e-mails, ordering patterns, and other on-line comments, they are now able to tailor their marketing strategy, to analyze marketing initiatives, and to react almost instantly to shifting market demands.

Several third-party, for-hire carriers have launched customizable web pages that enable customers to access real-time shipment information and customize their data output. These websites also provide information on standards and pricing data as well as the ability to inquire and track responses relating to freight bill invoicing or rating issues. Users can also obtain rate quotes, proof of delivery, and cargo claims status reports. One particular carrier set out to create personalized web pages where their customers could access all the information that they needed to effectively manage their own transportation operations. They have created over 1,000 personalized websites and receive well over 4 million hits per month.

E-Marketplaces

Growth of E-Marketplaces

Several financial institutions and telecommunication companies recently joined forces to create one of Canada's largest B2B electronic marketplaces. The proposed company will offer business products, equipment and furniture, computer hardware and accessories. They will also offer business services such as travel, personnel, promotional items, and courier services in a quick and efficient manner at a reduced cost. The newly formed company will produce value by combining procurement expertise and significant purchasing volume with the advantages of the e-marketplace. This will allow participants to save time and money and stay focused on their strategic priorities and core competencies. The exchange will also create opportunities for suppliers to increase sales by enabling new relationships between buyer and sellers.

Another Canadian example is a specialized e-commerce hub for the North American agricultural community, bringing together grain producers and traders, processors, input sellers, and brokers to transact day-to-day buying and selling online. Farmers enjoy faster, easier price discovery, lower transaction costs and greater market reach, while sellers, brokers, and retailers can use the power of the Internet to save time and money as they reach new customers and markets through the rapidly growing world of B2B e-commerce. This particular industry hub plans to expand in the near future to add both cattle and hogs to their site.

There are specialty e-commerce hubs for almost all major industries throughout Canada and North America including one that provides information and the ability to buy and sell online for participants within the oil and gas sector. Another e-commerce hub offers Internet-based crude oil trading using state-of-the-art technology to provide a secure platform for transacting business anonymously in real-time with the assurance of guaranteed commodity delivery and payment. These services are augmented by the benefits of timely access to current and historical market indicators. This hub fosters a liquid, efficient marketplace for buying and selling crude oil through instant access to a wide market audience, price transparency, and lower processing and administration costs.

E-Marketplaces' Business Model Needs Change

Many industry experts predict that the majority of these B2B e-marketplaces will not survive the "dot-com shakeout." A major stumbling block stems from manufacturers that were connected with suppliers through systems that created duplicate, rather than complementary, distribution channels. Whether for coalitions of brick-and-mortar companies or independent Net markets, this method fostered a lack of collaboration among customers and channel partners. This lack of collaboration resulted in companies having to manually input transactional data. The benefits of participating in public e-marketplaces require precise systems integration.

Buyers, meanwhile, grappled with the lack of connectivity to their back-end systems. Sure it was great to be able to search multiple suppliers for the lowest prices on goods and services, but when it came time to close the deal, buyers, more frequently than not, used the phone and/or fax to avoid paying e-market transaction fees. This points to the flaw in the public e-marketplaces' business model…most public marketplaces were not able to move beyond the transaction simply because transaction fees formed the core of their revenue streams.

The Rise of the Private E-Marketplace

Businesses are beginning to move to a more commonsense approach to using online marketplaces. Suppliers are beginning to ask several questions that read like a checklist for manufacturers:

- How can I make it easier for my customers to do business with me?
- How can I take care of my existing channel partners?
- How do I ensure my return on investment (ROI) for my technology investment?
- How do I increase my market capitalization over the long term?

The answers to these questions leads to just one logical outcome…the rise and eventual domination of private e-marketplaces. Private e-marketplaces (whether consortium-based or centred around a single, large supplier) will dominate in the future because they have the capacity to co-op existing channel partners (distributors, retailers, service centres, sales representatives) rather than exclude them. Buyers will benefit from this because they will receive greatly improved service before and after the sale, while realizing the kinds of transactional efficiencies the public marketplace promised.

Ultimately, private e-marketplaces will dominate because they provide greater control over branding, marketing, and transaction data that ensures long-term customer satisfaction. This is not to say that public marketplaces will disappear. The public e-marketplaces will become merely another sales channel for the suppliers, instead of the one and only distribution channel.

Why the Internet?

Now that the hype is over, it is time to look at what the Internet does or makes capable from a practical point of view. In a nutshell, the Internet is a unique medium that allows fast, two-way, secure communication. What makes the Internet different from electronic data interchange (EDI), a technology that has been around for more than 20 years? Essentially, the Internet performs the same function as EDI at a fraction of the cost. Moreover, it has capabilities that EDI does not possess, namely, real-time versus batch processing, transmission of unlimited data types including graphics, forecasts and computer-aided design (CAD) drawings, and an open, non-proprietary network. If carefully exploited, these Internet characteristics can lead to significant value creation.

To identify potential sources of value from B2B e-commerce, a good starting point is to think of the number of ways in which your company interacts with both customers and suppliers. These interactions can be categorized as one of the following: executing a transaction; determining optimal prices; discovering available supply and unmet demand; and supply chain planning for new and existing products. Thus, three distinct categories emerge where B2B e-commerce can be applied to extract value:

- Reduced transaction charges
- Improved market efficiencies
- Enhanced supply chain benefits

Prior to making any investment in B2B e-commerce, a company has to identify the value created and the effort required for implementation under each of these categories. The relative position of these categories will not be the same for all firms but will vary based on the supply chain strategy and competitive environment. A company must tailor e-commerce implementation to support categories where the value created is high relative to the cost of implementation.

Transaction changes are those costs incurred during the process of completing a transaction. This includes the cost associated with handling proposals and quotations, processing orders, staffing the procurement function, operating the call centre, and so on. Traditional channels of communication such as phone and fax require high staffing levels on both the buyer’s and the seller’s side. They also typically have high error rates because of multiple data entries. As companies move towards electronic processes, error rates decline, fewer staff are needed to process orders, and order placement speeds up, leading to lower overall transaction costs.

Companies using EDI already have achieved many of the benefits in this category. Given the high set-up cost and proprietary nature of EDI, however, they have only established links with their largest suppliers and or customers. The Internet with its open access and lower cost of participation allows all participants the opportunity to reduce transaction charges. In addition, the Internet allows real-time processing and electronic data retrieval and storage, which are essential components to reduce order cycle time.

Market efficiencies offer two avenues for a company to extract value: (1) the price paid when soliciting bids from suppliers, and (2) the ability to match surplus capacity in its supply chain with unmet demand. The Internet offers an opportunity in both instances. The Internet facilitates the aggregation of orders across all divisions of a company and makes it easier to bring in more potential suppliers for the bidding process. This translates into a better price for the buyer because of increased volumes and greater competition. B2B e-commerce also provides a mechanism by which a company can move its demand across suppliers based on available capacity. In the past, suppliers may have had idle capacity while original equipment manufacturers (OEMs), with unfilled demand, were searching elsewhere. A better matching of available capacity and demand provides value by improving the utilization of available capacity.

Supply chain activities include the flow of information, materials and finances between different stages of a supply chain from suppliers to customers. When different stages of the supply chain plan locally without sharing information, the result is the "bullwhip effect", whereby small fluctuations in consumer demand lead to large fluctuations at the manufacturer and supplier. In some supply chains, orders to suppliers can fluctuate 10 to 20 times more than orders placed by the ultimate customer. The increased variability leads to long supply lead times, excess capacity, high transportation and warehousing costs, large inventories and dissatisfied customers.

B2B e-commerce can create value in a supply chain at two levels. First, by increasing visibility across the supply chain, the Internet can help dampen the "bullwhip effect". The resulting decrease in variability allows a supply chain to improve customer service while reducing costs. Second, the Internet can provide value from increased collaboration. Collaboration is the ability of different stages of the supply chain to make decisions on product design and introduction, pricing, production and distribution that will allow all partners to participant. For example, a major

North American retailer and one of their key manufacturers increase visibility when the retailer shares point-of-sale data. However, the partners only realize full value when they use this information, along with capacity information at the manufacturer's facilities to decide the best timing for promotions and resulting production plans. If decisions are made independently, the retailer may run the promotion at a time when production costs for the manufacturer are the highest. Through collaboration, constraints on both sides are considered in determining a schedule that maximizes profits.

The Internet also facilitates collaborative product design. This is a key capability planned for the automotive industry exchange operated by major carmakers. Currently, CAD drawings of product components are designed by engineers in one country, distributed by courier to engineers in another country, and then finalized at a joint meeting in a country somewhere in between! B2B e-commerce promises a "virtual product workplace" where engineers can collaborate with suppliers and customers in real-time from their desks, saving cost while speeding up product development cycles and time to market.