12.4 CASE STUDY Elemica: Cooperation, Collaboration, and Community

It may seem unusual to refer to an entire industry as a “community,” a word reserved typically for collections of people who more or less know one another. Trade associations are one example of an industrial community. Trade associations form in an effort to pursue the interests of all members in the community although usually they do not include customers in the community. Elemica is a B2B industry trading hub aiming to revolutionize the entire supply chain of the chemical, tire and rubber, energy, and selected manufacturing industries worldwide by creating a “community of suppliers, customers, and trade partners” who have mutual interests. Elemica’s purpose is not just to foster cooperation on a one-to-one inter-firm basis, or just to foster collaboration on multi-firm projects, but instead to lift all boats on an industry tide by making all firms more efficient. Elemica is one of the few survivors of the early B2B e-commerce years. In 2011, Elemica connects over 3,000 companies to its network and clears over $70 billion in transactions a year.

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Elemica is a global e-commerce company founded by 22 leading corporations in the chemical industry (including oil and industrial gases) to provide cloud-based order management and supply chain applications and services. Elemica enables one-stop shopping through a single platform so companies can buy and sell chemicals to one another through their own ERP systems, or using a Web alternative. It also to one another through their own ERP systems, or using a Web alternative. It also helps companies automate all of their business processes, creating efficiencies and economies of scale that lead to an improved bottom line.

How does Elemica achieve community among a diverse, global collection of firms where firms are often both customers and vendors to one another? The really unusual aspect of Elemica is that the “social glue” bringing members of the community together is the ability to link together the ERP systems of participating companies. This “super platform” permits the companies to communicate with one another electronically, and to conduct transactions, handle logistics, and keep the books. Elemica is a commerce platform that has effectively standardized industry business transactions for all network members regardless of the type of ERP system they have, and it’s leveled the playing field for trade partners who are less technically sophisticated. It’s a neutral platform that facilitates millions of transactions for industry suppliers, customers, and third-party providers. In this sense, Elemica is one of the most sophisticated technology platforms in the B2B space.

One of the largest investments for a company is its ERP system. Despite these investments, intercompany relationships—the backbone of their supply chain—are often left to outdated and unreliable processes. These shortcomings cost billions in lost productivity, revenue, and profit. Elemica’s eCommerce platform changes that by helping its clients leverage their ERP investment by making it work for transactions to external trade partners. Elemica’s ERP-to-ERP connectivity enables companies to link their internal IT systems through a neutral platform so that information is moved into each company’s database while maintaining confidentiality and security. The chemical and oil industries were among the first users of ERP systems (referred to in the early years as “manufacturing resource planning systems”). These large-scale systems were developed by single firms in order to rationalize and control the manufacturing process. They achieved this objective by identifying the outputs, inputs, and processes involved in manufacturing and automating key elements including inventory control and planning, process control, warehousing and storage, and shipping/logistics. If a company needed to produce 10 tons of polyethylene plastic, its ERP system could tell it precisely how many tons of petrochemical inputs were required, when they should be delivered to manufacturing, the machinery and labor force required to manufacture the product, how long it would take, where it would be stored, and how it would be shipped. The systems can estimate the cost at any stage.

Elemica is the first e-commerce company in the chemical industry to successfully commercialize ERP-to-ERP connectivity. Elemica facilitates transactions of all types including order processing and billing, and logistics management. However, unlike some other companies in the field, Elemica does not buy, sell, or own raw material products. Instead it acts as an intermediary, or hub, linking companies together to automate confidential transactions. Like eBay or a credit card company, Elemica’s revenue comes from charging transaction fees on a per-transaction basis. Elemica’s network of clients opens the door for a company that connects to do business with all other connected buyers and sellers.

Elemica offers a variety of e-commerce services for suppliers and customers in the chemical industry, so they can automate both their business process and internal purchasing. Elemica provides a modular, hosted solution to simplify sales, procurement, and financial processes; integrate supply chain partners to diminish communication barriers; and reduce overhead and errors.

Elemica integrates information flow among global trading partners using a cloudbased business process network (BPN). Each client needs only a single connection to Elemica, and Elemica manages the connections to that company’s external trade partners. That means a company needs only maintain one connection to Elemica (important when it’s time for ERP maintenance or upgrade) rather than maintain a variable number of connections and infrastructure to all its trade partners. Once a company connects to Elemica, it can have access to thousands of other customers. Clients are charged for the service based on volume of usage. This is much more efficient than older EDI solutions to inter-company transactions. Elemica provides the platform for collaborative e-commerce through a fully automated integrated network of suppliers, customers, and third-party providers.

Elemica offers four modules: Logistics Management, Customer Management, Supplier Management, and Sourcing Management. Using these modules, companies can automate ordering, invoicing, tracking of shipments, and day-to-day business operations. Companies can sign up for one module or multiple modules depending on their needs.

Here’s an example of how Elemica works. Let’s say you need to order vinyl acetate from one of your suppliers. You put the order into your internal ERP system, the order is automatically routed to Elemica, Elemica routes the order to your supplier’s internal ERP system, and you get a confirmed receipt of the order. Elemica’s platform ensures the accuracy of the item number and purchase order number and sends an alert if there’s an issue. Once an order is confirmed, Elemica’s platform can be leveraged to plan and coordinate delivery, and automatically invoice and pay one another. For small or medium firms that may not have an ERP system, Elemica has a Web portal with online software that allows firms to participate in the community with suppliers and customers. The platform offers a closed-loop process, end to end, from the purchase order, to acknowledgments, load tenders and responses, carrier status updates, and dock scheduling. All of this takes place in a few seconds with little or no human intervention. Elemica has even developed a solution that allows a customer to send a purchase order via e-mail or a print driver (alleviating fax processes) that’s then routed to Elemica. The company then routes it to the supplier in their preferred format, integrated with their ERP system as though it were a true electronic order. Elemica provides a holistic approach to order management, allowing suppliers to automate the process with both strategic and core customers, without asking their customers to change their processes. It’s a win-win situation for suppliers and customers.

Unlike the automobile industry or the airline industry, where a few companies dominate, the $1.3 trillion chemical industry is made up of many companies of all sizes. The top 10 companies generate only 10% of the industry’s annual revenue total, and the largest player, Dow Chemical, is responsible for 2%. In addition, unlike many other industries, chemical companies often buy the output of other chemical companies and use it as raw materials for products, so they are often each other’s competitors and customers.

By the late 1990s, senior leaders at some of the larger chemical companies were aware of changes in technology that made the adoption of information technology and the tools of e-commerce more appealing. The question was how to best use these advances to benefit their businesses, and how to establish industry standards for electronic transactions to make it approachable and attainable for all. Leaders from companies like Dow Chemical and DuPont began discussing this subject and determined that a cooperative alliance would be the most efficient way to move forward. They were met with initial skepticism by marketing and sales staff, worried that online procurement would negatively affect relationships. Further, senior corporate leadership wasn’t sure that e-commerce would have any use in the chemical industry at all. And companies were cautious about the expense of investing in the infrastructure necessary for e-commerce.

However, there were compelling opportunities that were impossible to dismiss, including lowering costs, creating closer connections with customers and suppliers, and differentiating companies on something other than price. At the same time, new start-ups like e-Chemicals and PlasticsNet were making traditional chemical companies nervous. What would happen if their efforts to use information technology to streamline an inefficient supply chain helped them capture market share? In other words, if the more traditional companies didn’t move forward, they might end up losing the revenue race.

When Dow began looking at start-ups that were using e-commerce and talking to their customers, they found that customers were concerned about making an investment to establish online connections with multiple firms. Dow and DuPont decided that the best and most economically efficient option was to offer customers the choice of a neutral one-to-one link. This would remove the obstacle of multiple connections. And they decided to do this through a strong, third-party network so that customers and suppliers could mutually benefit from the community concern about lack of control with a third party, led the two companies to decide that the answer was to create and invest in a neutral e-commerce company, partnering with other companies to create the critical mass to make it viable.

In 1999, the corporate boards of Dow and DuPont agreed that there were major advantages to online transaction processing and additional online connections among buyers and sellers. Clearly, the customer didn’t want to make multiple connections due to cost and time involved, so a “hub” concept was the most viable. And a neutral community was the best approach.

All participants shared the common goal of creating a neutral platform to facilitate inter-company transactions and enhance business processes, and all were provided ownership in the new company. Dow and DuPont also reviewed the concept with the relevant regulatory agencies and received up-front approval. Ultimately, 22 global chemical companies were involved in the launch of Elemica.

When Elemica opened its doors in 1999, there were 50 start-up B2B e-commerce companies in the chemical industry. Nearly all of these B2B companies were thirdparty owned Net marketplaces suitable at best for short-term sourcing of some direct inputs. By 2009, only a handful of these Net marketplaces for the chemical industry exist. Elemica focuses on building longer-term business relationships by creating committed and contractual supply chains. The company acts only as a facilitator of business transactions, and does not directly buy and sell chemical products.

Companies who sign on with Elemica have the support of Elemica’s Professional Services & Implementation Team to work with staff to ensure a successful on-boarding process and acceptance of the business value with key trading partners. Many of Elemica’s staff came from the chemical industry and are integral to the success of this training. Once companies witnessed that more orders were being delivered and received on time, and that their bills were going out faster and being paid faster, the up-front on-boarding and training became easier.

Today, Elemica, a privately held company, has 150 employees, more than 3,000 partners in its supply chain network, and processes greater than $70 billion in annual transactions. Its headquarters is in Pennsylvania, and it has overseas offices in Amsterdam, Frankfurt, London, Seoul, Shanghai, Singapore, and Tokyo.

In July 2009, Elemica merged with RubberNetwork LLC, a $10 billion global rubber and tire company. Mike McGuigan, president and CEO of Elemica, continues to run the merged company.

Elemica’s business model has been successful primarily because it addresses the e-commerce needs of chemical, tire and rubber, energy and selected manufacturing companies of all sizes. It does this by offering multiple options for connecting to its hub system, multiple products that can be used alone or in combination, and by ensuring that only one connection integrated with a client’s ERP is needed for all transactions. Customers can use Elemica, and take advantage of technology it offers, without purchasing an additional internal system.

With Elemica modules and technology, companies benefit from improved operational efficiency, reduced costs due to elimination of redundant systems and excess inventory, and a much higher percentage of safe and reliable deliveries. The flexibility of Elemica’s modules and connections combines simplification, standardization, and efficiency. And clients have increased their profitability and improved cash flow through faster payment.

Several very large chemical companies use Elemica’s platform. In Europe, Shell Oil started using Elemica after recognizing that it had ongoing problems with the coordination of paperwork processing and deliveries. Truck drivers would arrive at delivery sites and wait up to two hours while paperwork was filled out. These delays were costing Shell money. Once Shell began using Elemica, things improved. Today, paperwork is processed 24 hours a day, and truck waiting time has been cut from an average of two hours to an average of 15 minutes. Given this success, Shell continues to expand its relationship with Elemica.

Dow Chemical began to transition to full procurement automation with Elemica in 2007. More than 300 of their MRO suppliers are now linked to Elemica’s platform. Errors are down 75%, and Dow has achieved economies of scale that have led to meaningful financial savings. Elemica helped Dow unify multiple, disparate business processes, reduced the cost of getting contracted items from suppliers, and increased efficiency in procurement, operations, IT, and accounts payable.

Air Products & Chemicals, Inc. is a global provider of gases and chemicals with 22,000 employees worldwide, and $10 billion in revenue. A major customer asked them for online ordering, but the initial method proposed would have required considerable additional work for both parties. Since both companies were connected to Elemica, there was a better option—the Elemica Supply Chain Hosted Solution.

**SOURCES**: “About Elemica,” [Elemica.com](http://Elemica.com), August 31, 2011; “Elemica Procurement Case Study: Dow,” Elemica Corporation, September 2010; “Elemica Order Management Case Study: BP,” Elemica Corporation, September 2010; “Elemica Case Study: LanXess,” Elemica Corporation, September 2010; “Elemica and Rubber- Network Merge,” [SDCExec.com](http://SDCExec.com), August 25, 2009; “Case Study: Elemica,” <http://www.ebusinesswatch.org/studies>, August 25, 2009; “Once Elemica Tackled the Hard Part, the Rest Was Easy,” [SupplyChainBrain.com](http://SupplyChainBrain.com) August 05, 2009; “Elemica Merger with Rubber Network,” [Philly.com](http://Philly.com), August 3, 2009; “Elemica Automates B2B Transactions Between Trading Partners—Speeding Up Orders by 78%,” [Softwareag.com](http://Softwareag.com), January 2009; “Top Chemical Company Selects Elemica’s Business Process Network to Automate Global Procurement,” [Redorbit.com](http://Redorbit.com), December 18, 2008; “Elemica: Standards and Business,” by Mike McGuigan, CEO, November 6, 2007, [www.pidx.org/events/upload/Elemica.ppt](http://www.pidx.org/events/upload/Elemica.ppt); “Elemica: Simplification + Efficiency = Increased Profitability,” by Fran Keeth, Elemica Business Leadership Forum, Philadelphia, Pennsylvania, 



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