The Evolution of E-Commerce

For MRO distributors, E-commerce has been perceived as everything from threat to saving grace. In the process, it has become an integral part of modern supply management. Here's how it got there. Nancy Syverson, Managing Editor
For some time, the $450 billion MRO distribution industry has wrestled with the issue of e-commerce. The concept of using the Web to conduct serious business has been viewed as everything from threat to godsend, depending on whom you ask and when you asked them.
Today, all evidence suggests that e-commerce is thoroughly legitimized, if not universal in use. According to a recent survey conducted by Cahners' *Industrial Distribution* magazine, E-commerce transactions are performed by 45% of industrial distributors. With total B2B spending predicted to reach $4.8 trillion by 2004, that number is sure to increase.
With its inherent ease of use, however, has also come the realization of some early fears of the process. "E-commerce is driving and will continue to drive consolidation among distributors," says Dan Garretson, an analyst with Forrester Research, Cambridge, MA. "Distributors that don't add much value beyond having inventory on the spot will go out of business." And as the dot.com explosion was making front-page news in 1999, the distribution industry was consolidating at a record rate.
As the dot.com industry's subsequent implosion proved, however, there was, and is, still much to be learned about this phenomenon. Garretson says that since the great dot.com shakeout took place, one of the many results was the creation of new uses for e-commerce. Companies that can provide efficiencies in distributing the product itself will still do well, he says, but so will those who can "distribute information and knowledge about the product. They may have lower margins, but as a result, gain a larger market share."
While most agree that electronic business is here to stay, questions remain regarding the form it will take. Though it has not always been in the spotlight, e-commerce has, in fact, been evolving for at least the past 40 years. Tracing its roots may give an indication of what advances we can expect.

It began with EDI

In the 1960's, e-commerce had already begun its evolution from concept to mega-business reality. In 1968, the newly introduced electronic data interchange system (EDI) allowed companies to do business over a private computer network, although at first there was no electronic protocol. "Most early e-commerce used a widespread technology known as electronic data interchange or EDI," reported *The Wall Street Journal* in a special e-commerce section in May 2001. "Long before there was an Internet, businesses were buying and selling vast quantities of goods online."
EDI is a technical standard that created a common language for business communications such as transmitting invoices and purchase orders. As the EDI standard developed to communicate with multiple companies, the technological race was on to provide a less expensive, quicker and easier way to access the Web. The introduction of the Netscape browser in 1994 was all that was needed for

business - and consumers - to jump into the high-paced world that e-commerce could offer.

It wasn't long before the Golden Age of the dot.coms arrived. In 1998 Amazon reported that the Internet-only bookseller had generated more than $1 billion in annual sales. AOL topped those earnings with reports it had generated $1.2 billion in sales just during the 10 weeks of holiday shopping for that year. The dot.com era was in full swing.

Distributors that were not Web-enabled during the heyday of the dot.coms were threatened by the success of the new e-commerce business model. "With the emergence of the dot.coms and e-marketplaces, distributors were no longer the exclusive information conduit between manufacturers and customers," says Garretson. Buyers could log on to a company Web site or e-marketplace and get information like product availability and pricing very quickly. Dot.coms gave customers the option of going around distributors and buy directly on the web.

"The result was that a huge part of the distributor's value add was taken away," says Garretson, "and e-marketplaces put distributors in direct competition with other distributors." When linked to an e-marketplace or e-exchange, customers could compare prices and make decisions regarding which manufacturer or distributor had the best fulfilling capabilities for their particular situation.

"Distributors faced price pressure from the e-marketplaces," says Garretson. "Because of the competition, profits got competed down to minimal margins." Many distributors responded by creating their own Web sites. They also facilitated sourcing by putting their product catalogs online. Although this tactic increased their visibility, buyers could still go to any other Web site to evaluate pricing. Another step in the evolution of e-commerce had to be taken.

New niches for distributors

E-commerce, on its most basic level, represents a transition from one way of doing business to another. Sales and purchases that in the past would have been arranged by telephone, fax, or face-to-face sales calls could now be sent over the Internet. But while e-commerce deprived distributors of some of their traditional roles and functions, it also created two new possible niches to distinguish themselves and add value to the supply chain.

One of the ways distributors chose to distinguish themselves was to become efficient at logistics so manufacturers would continue to outsource to them. For example, in June 2001, Chicago-based Newark Electronics, one of the first electronics distributors in the U.S., went online using a catalog software that has enabled the company to ship 8,000 orders per day, according to Tony Chien, vice president and general manager of e-commerce. Chien says Newark supplies 48 branches, call centers, Web sites and E-procurement (Ariba, Commerce One) partnerships. Customers who buy the types of standard electronic components that Newark offers make two demands, according to Chien: One, deliver their order as soon as possible with no snags; and two, simplify the ordering process. Newark management recognized that flipping through its 1,600-page paper catalog was a tedious and time-consuming task. Their e-commerce system initiative addressed that issue, and features a product search via free text description or technical attributes. The company has also added automatic e-mail ship notices with tracking numbers for all Web orders.

Another way distributors chose to distinguish themselves was to become on-the-spot experts of their product. In many cases, customer questions are directed to the distributor or the manufacturer's distribution arm for information.

One of the best examples of an MRO distributor's online evolution is W.W. Grainger. In June 1995, the Chicago, IL-based distributor created Grainger.com, which started receiving online orders about a year later. "Grainger.com was a site that initially provided product information," says Carl Turza, general manager of Grainger.com. "But by January 1996, it had quickly evolved into providing technical support."

Today, the site is considered a state-of-the-art e-commerce dot.com. In October 2001, *Modern Distribution Management* magazine it as a one-stop shop that is convenient, easy-to-use, and personalized with available inventory. The customer has to register online and has the opportunity to define its procurement needs. Any pre-existing agreements such as pricing are programmed into the system and affected as soon as any individual from the client company logs on. When someone registers on Grainger.com, notification immediately goes out to the regional distribution branch. A local sales rep may stop by for introductions.

"When you think of Grainger providing hundreds of thousands of items online, it is difficult to separate someone's wheat from someone's chafe," says Turzin. "But if we do know who you are and what you're interested in, we can clear the way for you to get to what you want faster and easier."

Survival of the fittest

The dot.coms had a difficult model to support. They were start-up companies with big investments and small customer bases. To build their customer base, the dot.coms initially offered incentives including free or minimal charges to post information online and free or minimal charges for buyers to get access to that information. But that didn't address a larger issue.

"The dot.coms had a real chicken-and-egg problem," says analyst Garretson. "For the marketplace to function effectively, they needed customers to buy there. They needed the customers to attract the sellers. But to attract the sellers, they needed the customers. It was difficult to solve."

When ambitious but inexperienced start-ups faltered, time-honored distributors like Grainger and Newark Electronics were swift to fill the failed dot.com niche. How? They created an alternative to the e-marketplaces by becoming e-marketplaces themselves. These companies were already "information aggregators" with industry reputations that were respected by both customers and suppliers. But what these distributors didn't have, says Garretson, "was the efficiency of working through an electronic online market, so they worked to move the services they already offered online."

W.W. Grainger, for example, has spent 74 years building a supply chain and developing a logistics neighborhood that gets product to the client company, according to Turzin. Likewise, Newark Electronics has distribution experience that dates back to the 1920s. "Grainger.com was built only as a front end to all of that hard work," says Turzin. "E-commerce was a new way of talking to our customers, but Grainger.com is still Grainger."

As Grainger and Newark demonstrate, a new business environment demands new tools. In the evolution of e-commerce, software products have been key. Supply-chain management software has allowed users to link every level of the supply

chain (from raw materials to end user) in an online system. Suppliers can view electronically current and forecasted production needs of a product for any one of its client companies. The supplier can synchronize its own production shipping schedule to the manufacturer's needs.
e-Steel Corp. based in New York, NY, is a provider of supply-chain software. Its private exchange software called SupplyNetwork automates a complete supply chain. "It enables everyone in a supply network to have instant, real-time visibility," says Sherry Sigler, senior director of marketing at e-Steel. "It is a more streamlined way of doing business." Other benefits of an automated supply chain include standardizing language, controlling product flow and its associated factors and facilitating collaboration.
In September 1999, e-Steel took a new step by establishing the Steel Exchange, which linked buyers and sellers of steel in the global marketplace. The Ford Motor Co., which is one of the largest buyers of direct materials in the world, was one of its first members. Ford spends more than $1 billion annually for about 2.5 million tons of steel it uses to make 2,600 parts and components. In May 2000, E-Steel and Ford, based in Dearborn, MI, agreed to collaborate to automate Ford's complex, multi-tier private supply chain network. The resultant supply-chain system had three components: supply network management, information management, and transaction management. The system was implemented in March 2001 and went live across Ford's entire supply chain of 1,200 participants in Aug. 2001.
"SupplyNetwork gave Ford a lot more control over the flow of steel in their supply chain," says Sigler. "The visibility of the system across the chain helps ensure that steel is shipped to the assembly plants on time."

The selection for e-commerce

The Industrial Distribution survey revealed that there is good reason for the change to e-commerce. It found that companies could:
&#149 Save 1% to 2% on every order with paperless transactions from lower payment fees
&#149 Save 10% on the purchase price of indirect goods and services by strategically sourcing each category
&#149 Reduce processing costs by $25 to $75 per paperless order
&#149 Reduce collaboration costs - "the cost of doing business" - that were previously assumed
&#149 Reduce costs by greatly reducing processing time in which transactions move in minutes, not days
Despite all of these benefits, the move to Web-based e-commerce has been slow. In another recent study, conducted by Jupiter Research, 70% of B2B buyers said moving online is a top priority, but more than 60% said they are still waiting for their suppliers to meet them there.
Likewise, the *Industrial Distribution* survey found that although more than 84% of purchasers consider e-commerce "important," 83% say their own companies are less than 20% ready to take full advantage of it.
Distributors may not have moved quickly online because manufacturers are still making decisions on how to integrate e-commerce into their own business strategies. FKI Logistex, a Danville, KY-based manufacturer of conveyers, pickers and sorters, has not posted its catalog on the Web, for example, and has no plans

to. The company rejects the idea of selling its conveyors on the Web because of the complexity of the product.

"We provide Web access into our project management system," says Jon Ormsby, chief information officer at FKI, "so our customers can see the status of the installation projects and any changes that have been made." The FKI e-commerce strategy requires that the customer purchase a product, which can range in cost from $1 million to hundreds of million dollars. Once a customer has purchased an FKI conveyor, they can log on and track the progress of the custom installation. The company also has indefinite plans to sell its spare parts online in the future.

Other companies have opted to sell online only those portions of their product line that do not require customization or "tangibility." According to Bob Belshaw, vice president of marketing at INSIGHT, a logistics supply-chain planning software provider, for reasons like this, e-commerce is not an overall, blanket strategic view.

"A couple of years ago, companies went out and spent a lot of money for e-commerce software to overhaul their whole system," says Belshaw. "That software has ended up sitting on the shelf. "Now companies are saying, let me get something that really fits."

To help companies understand how e-commerce can help them, companies like Simulation Dynamics, Inc., in Maryville, TN, developed simulation software. Its Supply Chain Builder, for example, is a simulation tool that can be used to help companies predict the performance of their processes over time and make informed decisions regarding changes, like implementing e-commerce strategies.

"It's an evolution, not a revolution," says Larry Vandendriessche, director of Marketing at Swagelok Co., Solon, OH, a company that has been conducting online business for almost 15 years. Vandendriessche calls its current e-commerce model - a storefront through which buyers can link directly with distributors via the Swagelok Web site - as simply "another tool to do business." The real change has been from e-commerce to informational commerce, says Vandendriessche. Because there is more information available to customers, a salesman needs to know more. Instead of spending time typing up an order, he or she is now challenged to spend the time gathering information and gaining expertise about the product.

"The Web makes it easier to distribute that information," says analyst Garretson. "It becomes a question of cost structure," he says, "and it's going to be more costly for the distributor who does not conduct e-commerce to operate." He predicts that in the long term, it will also become more difficult for this distributor to survive.