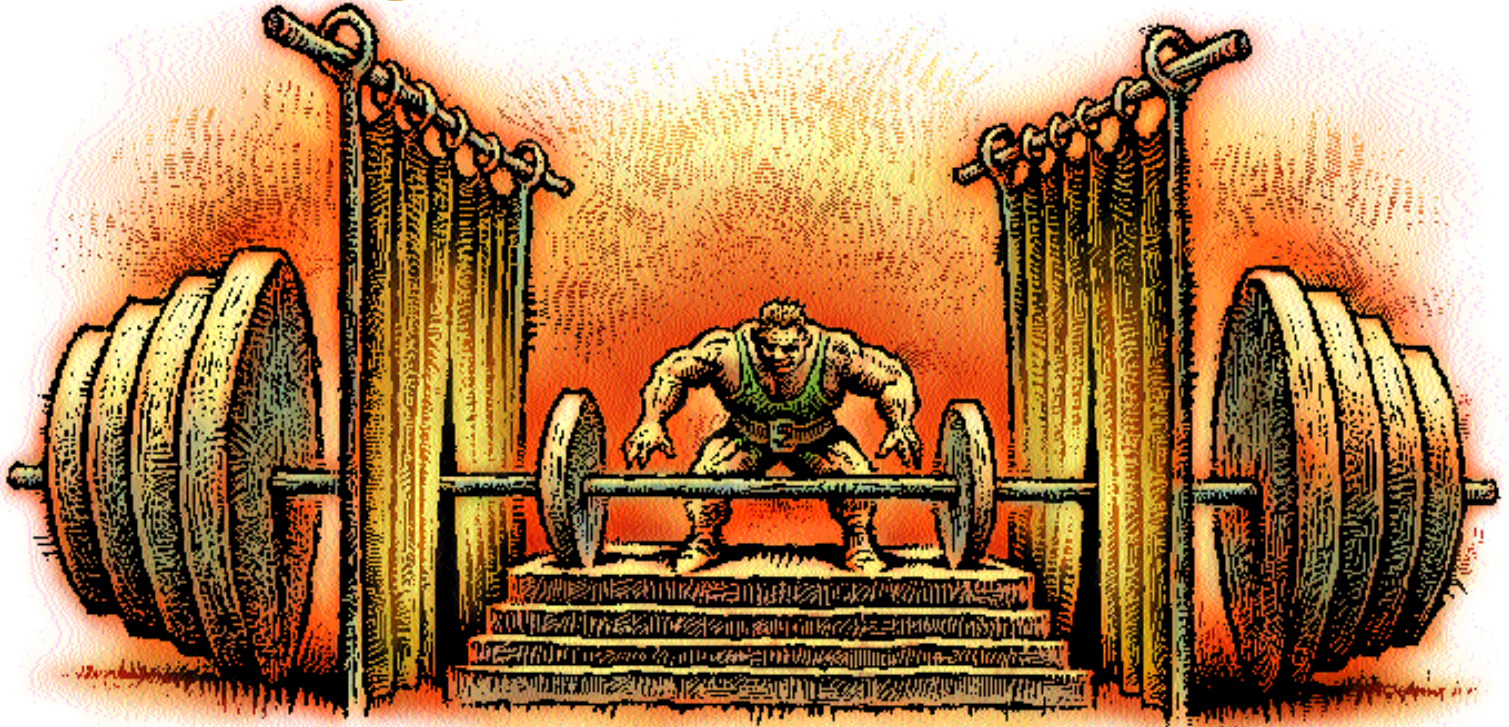


# E-FULFILLMENT



## IT'S *Harder* THAN IT *Looks*

By David F. Pyke, M. Eric Johnson, and Phil Desmond

The beginning of the e-tailing boom was all about flash. Now the hard realities, like the need for order fulfillment, have set in. Can e-tailers develop a fulfillment capability that satisfies customers while keeping costs under control? The answer is yes, but only if they pay careful attention to the supply chain fundamentals. The furniture industry offers an instructive example with lessons for all.

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THE PAST YEAR WITNESSED A REMARKABLE INCREASE IN ONLINE SHOPPING. Even the early estimates for online spending, which seemed aggressive at the time, have been far exceeded. Yet with all this success, e-tailers in many segments still struggle with order fulfillment and even with their basic business models. The 1999 Christmas shopping season signaled to both consumers and e-tailers that order fulfillment was a critical component of e-commerce. Frustrated consumers had to contend with late deliveries, damaged goods, and messy product return procedures, while dot-com managers found fulfillment costs spiraling out of control.

To the casual observer it might seem easy to fulfill orders for books, CDs, and toys quickly. But even these "simple" products have experienced significant order fulfillment troubles. Amazon has watched its inventories explode and its ability to turn inventory plummet. For physically large consumer products—like furniture, home appliances, and sporting goods such as sailboats, bikes, and canoes—order fulfillment is far more challenging. Though many recognized these challenges from the very beginning, euphoria over Internet retailing and the success of companies like Amazon and Dell led many entrepreneurs, investors, and business writers to ignore the significant issues associated with managing virtual supply chains. Only after capital markets cut off the funding did the issues of e-fulfillment start coming to the fore.

Illustration by Phil Foster

This article examines e-fulfillment practices in the Internet furniture industry. It argues that survival is dependent on effective supply chains that enable e-tailers to reduce order fulfillment costs while delivering unique customer value. We'll develop a framework for understanding supply chain issues in retailing and use that framework to draw lessons for all e-tailers.

Although our analysis concentrates on the supply chain, a significant component of that value-creation process occurs in the buying experience. For many observers, making the sale in a virtual world initially seemed to be the biggest challenge. But for products like books or toys, e-tailers quickly found that information coupled with technology could create formidable sales tools. The ability to suggest products and quickly browse large selections of product offerings became key competitive weapons. Yet for those products where "touch and feel" are important, e-tailers had to work harder.

As with any e-tailing business, furniture presents many opportunities and challenges where the buying experience is concerned. Replacing the "touch and feel" of buying furniture with technology is not easy. How can an Internet customer flop down on a floor-model sofa to see how it feels? Industry insiders were certain that customers would resist buying large, expensive items over the Internet. However, initial customer resistance has been far less than expected, and it is decreasing daily, as suggested by current and projected online sales figures (see Exhibit 1).

e-Furniture companies have shown that technology can be used to create a virtual showroom with features such as virtual floor layout, where customers can design a room of furniture, or virtual re-upholstery, which lets customers sample different fabrics on the screen with a simple mouse click. Soon, online customers will be able to view products in 3D using any available fabric. Of course, many e-tailers supplement technology with old-fashioned approaches such as mailing out a swatch of upholstery material, which allows customers to feel the fabric and see how it looks in their living room. The touch-and-feel problem will no doubt persist in many market segments and for some product categories. But it is clear that sizable Internet markets exist even for difficult products like furniture.

### Supply Chains and e-Fulfillment

Supply chains for Web sellers can be broken into a series of subprocesses under two main process headings: supply management and order fulfillment. Many e-tailers outsource some or even all of these processes depending on their strategy and core competency.

Supply management refers to the activities pertaining to managing the supply and inventory of product, including:

- Supplier management (developing new suppliers and maintaining relationships with existing ones; this also includes internal suppliers).
- Procurement (making purchasing decisions).
- Inventory management (receiving, storing, protecting, and controlling inventory).

Order fulfillment includes all of the activities from the point of a customer's purchase decision until the product is delivered to the customer and he or she is fully satisfied with its quality and functionality. For e-tailers, e-fulfillment comprises the following five distinct processes that may be performed by the e-tailer or outsourced to other partners:

- Order capture (the process of taking a customer from the point of a buy decision through successful data capture and checkout).
- Order processing (preparing the order for pick and pack, including credit checking, pick list creation, invoicing, and address label generation).
- Pick and pack (physically selecting the correct items, inspecting them, and preparing them for shipment).
- Ship (transporting the goods from the warehouse to the customer's address).
- After-sales service and returns handling.

When products are customized or made to order for the customer, pick and pack may include assembly or customization, which again may be performed by the e-tailer or a third party. For example, Dell assembles its computers to the configuration specified by the customer and then readies them for shipment.

Different strategies for maintaining or outsourcing these subprocesses abound. They range from fully outsourced supply and fulfillment to complete in-house control. For example, Calyx and Corolla ([calyxandcorolla.com](http://calyxandcorolla.com)) outsources order fulfillment to its partner suppliers while carefully managing the supplier relationships and continuously developing new suppliers. eToys started by

outsourcing order fulfillment to Fingerhut but has since built its own warehouses to gain control of these processes. Under an agreement reached recently by Toys "R" Us and Amazon, Toys "R" Us will manage the supply processes while Amazon will manage order fulfillment.

To better understand the operational competitiveness of the different supply chain models, we will consider how the e-tailer supply chains in the furniture industry compare with the traditional retail supply chain on the key operational objectives of *cost*, *quality*, *delivery*, and *flexibility*. We will



show that managing and balancing these objectives is as fundamental to the success of virtual supply chains as it has been to longstanding traditional models. To avoid inconsistencies among operational objectives, managers must carefully *define* their objectives, ensure that they are *measurable*, and *rank* them.

Exhibit 2 suggests some sample definitions and measures for each of the four objectives. Managers should consider all four and focus considerable attention on those that are most critical for competitive success.

Before examining e-fulfillment for furniture, we must first consider the traditional model.

### The Traditional Retailer in the Furniture Industry

Furniture manufacturing and distribution are notoriously difficult. Items are bulky and often are handled many times in transit from the factory to the home. The more handoffs in the supply chain, the more likely that items will be damaged or delayed. Returns can be troublesome as well. If a customer does not like a table once he or she sees it in the house, he or she may want to return it for another table or for cash. The table usually has to be repackaged, moved from the home to the truck, and then brought back to the store.

Small case goods might be relatively easy to ship. And they certainly are easier to visualize on the Internet than, say, an upholstered sofa. Because the challenge is greater with the sofa, we will use it as an example. If a company can develop a viable Internet supply chain for upholstered sofas, other products should be relatively easy.

The traditional brick-and-mortar retailer's supply chain starts with the customer. A customer shops in the retail store and sees a sofa that is just right for his or her living room. In a few cases, the customer may purchase the sofa directly from the floor. However, in most cases, the showroom floor model may be the right style but not have the desired fabric. So, after choosing a fabric from thousands of samples, he or she places an order with the retailer. (Even if the floor model is exactly what the customer wants, it is often unavailable for direct sale because the showroom models are display items.) The retailer takes a deposit and passes the order to the manufacturer. The manufacturer orders the fabric and schedules the product for manufacturing during the next production cycle assigned to that item (assuming the fabric has arrived in time).

After production, the manufacturer ships the sofa, often with many other products, in a full truckload quantity to retailers in a given geographic region. The retailer then holds the sofa in inventory just long enough to perform

some final assembly steps, such as attaching legs to the sofa and repairing any damage. The retailer handles all local shipping and final placement and assembly in the home. The traditional retailer also provides design assistance, catalogs, fabric books, and even floor layouts that give a real-life feel for how the furniture will look in a home. If the customer discovers a problem with the product, the retailer is accountable for fixing it. The retailer also is responsible for handling returns.

Note that it is critical in this industry to include "repair damage" as an explicit stage in the supply chain because so many items require at least minor repair. The people who "delux" and repair incoming furniture are highly skilled and among the highest-paid employees in the store. Likewise, it is important to include home assembly because the customer is often not able or willing to do this. Thus, the traditional furniture supply chain looks like this:

Manufacturing → Ship to retail → Inventory at retail → Repair damage → Local shipping → Assembly in home

### The Pure e-Tailers

Now let us consider the pure e-tailer—a Web seller that does not produce any goods itself and holds no inventory. The clear market leader of the pure e-tailers, until recently, was Furniture.com. Furniture.com closed its virtual doors in early November 2000. However, other pure e-tailers, including GoodHome.com, are still pursuing this channel. These




EXHIBIT 2

Definitions and Measures of Key Supply Chain Objectives

Objective	Definitions	Measures
Cost	Lowest cost in the industry Cost competitive with that of our closest competitors Cost is relatively unimportant because we hold the patent and can charge a premium	\$ per unit Labor hours per unit Inventory turnover \$ per unit delivered to the customer
Quality	Performance Conformance Durability Reliability Serviceability Features Aesthetics Image	Defective parts per million Warranty dollars spent Percentage of returns Results from satisfaction surveys Internal yield rate
Delivery	Speed Reliability	% of demand met from the shelf % on time to the customer's home Number of days late Cycle time from order to receipt
Flexibility	New-product introduction Ability to customize Breadth of product mix	Time to market Number of new-product introductions per year Number of stock-keeping units in the catalog Variety offered



companies' Web sites offer thousands of products made by hundreds of manufacturers. Most say they do not sell any top brands. The rationale: They want consumers to remember the e-tailer's brand rather than the manufacturer's. In reality, of course, the major manufacturers want to avoid channel conflict. The e-tailers are targeting people just out of college who are more likely to buy over the Internet and who have less long-term interest in the furniture they buy than older consumers do. However, the e-tailers feel that these customers will be repeat buyers when they marry and move into bigger homes.<sup>1</sup> When a customer shops on a pure e-tailer's Web site and finds just the right table or sofa, he or she places the order with a click of the mouse. For non-custom products, the order is transmitted to the supplier, which may fulfill demand directly from inventory. In contrast to the book industry, there is no single distributor that can fulfill demand for a vast variety of non-custom goods. When Amazon went online five years ago, distributors like the Ingram Book Company supplied most of the titles—a ready-made supply source. For many industries, including toys and furniture, no such distributor exists. Thus, e-tailers must develop their sourcing processes much as their brick-and-mortar counterparts did.

Returning to our special-order sofa, the Internet firm processes the order and transmits it to the manufacturer, which schedules production exactly as in the traditional retail case. The Internet firm arranges for a third-party logistics company (3PL) to coordinate the delivery. The 3PL coordinates the long-distance shipping that is provided by partner carriers and often takes possession of the product near the customer's home and makes the final delivery.

Multiple handoffs often occur because of long distances and heavy less-than-truckload (LTL) shipping volumes—the longhaul trucker delivers the sofa to a transit station where it is loaded on a vehicle for final delivery to the home. The number of logistics providers, such as GeoLogistics, that will deliver to your home is rapidly growing. Many offer “white glove” services where the delivery drivers will carry the furniture into the home, unpack it, and assemble it. As long as the customer is happy with the product and it is undamaged, order fulfillment is complete. However, if the customer is unhappy with product or some repairs are required, the process becomes more complicated.

To summarize, the e-tail furniture supply chain looks like this:

Manufacturing → Long-distance shipping → Local shipping → Assembly in home → Repair damage

Consider how the pure e-tailer's order fulfillment process compares with the traditional retailer's on key measures of supply chain competitiveness. The speed of delivery in both cases is limited primarily by the manufacturer, particularly the delivery time for custom-ordered fabric. So on this mea-

sure, there is little differentiation.

There is substantial debate over whether the pure e-tailer has a significant cost advantage when it comes to capturing orders. Local stores must maintain facilities and showroom inventories to attract customers and capture orders. Yet the Web sellers, for their part, must make large investments in

## Survival is dependent on effective supply chains that enable e-tailers to reduce order fulfillment costs while delivering unique customer value.

advertising to create awareness and build a brand. They also must invest in Web site design and related selling technologies to overcome the “touch and feel” limitations. But many argue that this investment, while large, is scalable—meaning that larger sales volumes will not require proportional investment. At this point, it is still too early to tell if Web sellers will realize this advantage.

Clearly, e-tailers can provide vast variety with relative ease because they are not constrained by physical showroom floor space. So in terms of flexibility, they should be very competitive. Though channel conflict issues may prevent e-tailers from offering popular brands, few other limits on variety exist, other than the cost of developing supplier relationships.

When we turn to order fulfillment costs, the picture is clearer. With regard to transportation and inventory costs, it is hard to find any savings in e-tailing. In fact, transportation costs, in many cases, will be higher because items shipped directly to the customer one at a time do not benefit from transportation economies. Here is a critical point: If the geographic density of orders permits a full truckload shipment from the factory to a relatively small geographic region, the shipping cost for the Internet firm could be quite low. There may be only one shipment, from the factory direct to the home, with no handling by the retailer and no second shipment on the retailer's truck. However, if the density is low, the item must be shipped LTL for much of its journey, thereby driving up costs. Likewise, if the shipping distance is long, the items likely will be transferred from one truck to another en route, resulting in possible damage. This leads us to consider quality.

Managing quality may be the pure e-tailer's biggest challenge. For the virtual chain, handoffs and outsourced delivery can markedly reduce the company's control over quality. More importantly, quality failures in the e-chain are visible to the customer. In the theory of quality management, quality failures are distinguished as either internal or external failures. Internal failures are quality defects discovered by the supply chain before the customer sees them. These represent the vast majority of failures experienced by the traditional chain. External failures are ones discovered or seen by the customer. These failures are the most expensive both in terms of correcting the defect and regaining the lost goodwill.

Unfortunately for e-tailers, external failures are the far more prevalent of the two.

So what happens if the sofa arrives at the store damaged? Traditional retailers typically have in-house repair personnel. And in any case, they would take responsibility to ensure that the repair is done correctly *before* the item is delivered. Internet firms do not have a local presence, so they typically outsource repair to a third party such as FurnitureMedic ([www.FurnitureMedic.com](http://www.FurnitureMedic.com)). At FurnitureMedic, which has 600 locations nationwide, repair is done by professionals and guaranteed by the e-tailer, according to the company's Web page. Yet a number of issues remain. For instance, is there a nearby FurnitureMedic location? If not, how long will the repair take? And how much will it cost? Finally, is the third party capable, and will it take the same care as a local retailer whose reputation is on the line?

To overcome customers' fears concerning quality and ordering on the Internet, many e-tailers provide an unconditional guarantee—that is, they will take back any item and replace it with an item of equal value. The critical issue then becomes how often customers will return products. If they rarely do so, e-furniture firms are wise to provide such generous service; customers are happy, and fears of losing the touch-and-feel benefits of in-store shopping are reduced. Frequent returns, however, could bankrupt a company in short order because of the high handling and shipping costs involved.

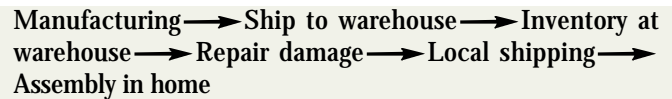
For simple products like books and music, e-tailers have found returns to be very manageable—below one percent in some cases. By contrast, observers say that the average return rate in the traditional furniture industry runs about five percent. Furniture.com reported that its return rate was 10 to 15 percent. Insiders who left that company, however, claimed that returns had reached as high as 40 percent. Living.com reportedly had returns of 30 percent before it closed its doors. GoodHome.com's answer to the returns problem is to accept returns within 30 days of delivery on non-custom items and to not accept any returns of custom items.

### Pure e-Tailers With Warehouses

A second category of Internet furniture firms is quite similar to the pure e-tailer model, except that these companies have warehouses. (Of the two best-known names in this category—Living.com and BenchmarkBeHOME—Living.com has already failed.) e-Tailers with warehouses typically stock fast-moving, smaller products that are not customized in any way. An upholstered sofa, for instance, would not be held in inventory at the warehouse, but a lamp would be. If a customer orders a product that is available in the warehouse, the short leadtime allows the e-tailer to compete on speed at the expense of the inventory cost.

For our sofa, however, the leadtime is identical to that of the sofa ordered from the pure e-tailer. The firm could choose to ship the sofa from the factory to one of its warehouses and then ship from there to the home. Yet the ware-

house might not be anywhere near the home. In such cases, the final shipment could involve long-distance trucking with a transfer to a local trucking company. The supply chain of the "pure e-tailer with warehouses" model looks like this:



These firms face the same issues as the pure e-tailers, with three exceptions.

1. They may be able to handle some repair in the warehouse, thereby reducing external quality failures.
2. The warehouses also provide a place where product returns can be processed and resold.
3. Holding items in warehouse inventory speeds up delivery and may also provide some transportation cost efficiencies.

### Manufacturer Direct

Manufacturer direct is another interesting alternative for the e-channel. In this case, the manufacturer sells furniture over the Internet in much the way Dell sells computers. Most major manufacturers have not pursued this option because they need a presence in brick-and-mortar stores. Channel conflict confronts many manufacturers that have close, established relationships with distributors or retailers. For example, in the PC marketplace, Hewlett-Packard, Compaq, and IBM all shunned the direct sales model to protect their retail partners. Selling through a new channel angers existing customers and thus puts a significant volume of sales at risk. In some industries, however, a new player like Dell can force the issue.

Note, however, the many striking differences between furniture and PCs. Product variety in furniture is vast compared with PCs, making it impossible for one manufacturer to cover all possible key products. Also, unlike PCs, there is far less standardization in the furniture industry—there's no Intel or Windows driving product development in furniture.

One option is for a furniture manufacturer to abandon the existing channel and go whole hog into selling direct. But the risks are so high that some furniture manufacturers take the opposite approach and instead state explicitly that they will not sell over the Internet. Furniture Brands International, the nation's largest manufacturer and maker of the Broyhill, Lane, and Thomasville lines, will not allow Internet sales of any of its products. And it will not sell to retailers that do most or all of their business online. Therefore, manufacturers that choose to sell direct—or for that matter to e-furniture companies—typically either are distressed or are niche players. Krause's Furniture Inc., for instance, with net losses totaling \$30 million over the last three years, recently received a capital investment designed to move the company toward partnerships with Internet players.<sup>2</sup> Another strategy is to try to maintain existing relationships while establishing new channels. Some companies segment the market and sell to new segments online. A furniture manufacturer in Vermont, for instance, sells second-quality products online



#### EXHIBIT 3

### Brown Furniture's Internet Vendor Policy

- Brown Furniture will review the Internet distribution policies of all existing and potential vendors. We will not add new vendors who sell products through distribution channels that utilize the Internet.
- Existing vendors will be monitored. ... We will monitor various Web sites to determine if products from existing vendors are available.
- Retail sales will be monitored. If Brown Furniture determines that a customer has shopped our store and purchases the products through the Internet, the manufacturer will be contacted and the vendor will lose one display of floor space for each lost transaction.

and also sells online to geographic regions not currently served by its retailers. This company is attempting to pursue both traditional retail sales and partnerships with e-tailers. Another furniture maker, American Leather, claims it can turn around a customized sofa in two weeks—a capability nicely suited to Internet sales. However, the company has no way to handle returns, so it has been building partnerships with e-furniture firms.<sup>3</sup>

Retailers, for their part, are encouraging manufacturers to resist online sales. They do not want to be a “petting zoo,” where customers come to see and touch the items and then disappear to place online orders. Brown Furniture, for example, has adopted the formal Internet vendor policy shown in Exhibit 3. The hybrid “click-and-mortar” approach that we will discuss next may help assuage retailers’ fears, although the jury is still out.

In any case, the supply chain for direct players faces many of the same challenges as the pure e-tailer chain does. Manufacturers capture orders and schedule production of the items. When complete, the items are shipped via third-party logistics providers to the customers’ homes, as shown here:

Manufacturing → Long-distance shipping → Local shipping → Assembly in home → Repair damage

Order fulfillment cost, delivery, and quality issues confronting the direct players are nearly identical to those faced by e-tailers. When handling returns, manufacturers have an advantage. They can take the item back to the factory and perform the rework with a higher likelihood of quick resale. Of course, manufacturers are certainly far more focused on a particular style of furniture and thus are less flexible in their responses to customer demands for product variety.

A variant of the manufacturer-direct model is provided by Bayla.<sup>4</sup> This firm seeks to control nearly the entire supply chain by developing front-end Internet sales while integrating backwards into manufacturing. Bayla’s plan is to build three new manufacturing plants with state-of-the-art equipment that will enable the company to deliver made-to-order products quickly.

Our perspective is that companies that choose to compete in this way face two potential obstacles. First, because fabric

leadtimes are so long, they must either limit fabric variety to keep costs down while still providing quick delivery or increase costs by holding inventory of a wider range of fabrics. Second, even with fabric available, manufacturing leadtimes can be long. It is clear that quick turnaround of customized products requires that the manufacturer maintain excess capacity, thereby increasing costs.<sup>5</sup> The point is that quick delivery is, in fact, possible, but the company must compromise on either cost or flexibility/variety.

### Retailers on the Web

Retailers that add Internet sales to their existing brick-and-mortar model provide an interesting twist to the story. The case everyone is watching is Ethan Allen—a company with more than 300 stores nationwide, 100 service centers for repair and deluxing, 21 factories, and three sawmills. Ethan Allen owns nearly the entire supply chain. Its foray onto the Web is a fascinating experiment in clicks and mortar. A customer can find the sofa he or she likes in an Ethan Allen showroom and then order it on the retailer’s Web site ([www.ethanallen.com](http://www.ethanallen.com)). The sofa is manufactured just as in the other scenarios and is then shipped to the Ethan Allen store closest to the customer. The store handles repair, local delivery, and final placement and assembly—just as in the traditional brick-and-mortar case and just as if the customer ordered the sofa at the store. If the customer records the fact that he or she visited a particular store, that store receives a 25-percent commission. But even if his or her visit is not recorded, the store still receives a 10-percent commission for handling and delivery.

The Ethan Allen supply chain is identical to that of the traditional retailer. However, the click-and-mortar model solves some problems faced by retailers—such as the inability to offer 24-hour shopping. And it solves some problems faced by the Internet firms—including the lack of access to local delivery and repair services.

Yet Ethan Allen does face some limitations where flexibility is concerned. Although the company offers a large selection of products, that selection is still limited to specific styles. If the customer wants a French country sofa, he or she will have to look elsewhere.

Some retailers that do not own the supply chain are trying a similar strategy. A case in point is Arhaus Furniture, a company with 15 stores in Ohio, New York, and Kentucky that is using the Internet to expand geographically. For sales close to the existing stores, the model is very similar to the Ethan Allen click-and-mortar experiment. However, if orders arrive from distant customers, Arhaus will face the same issues that e-tailers that own warehouses do. By using van lines to ship long distances, Arhaus says, it will be able to keep shipping costs at 10 percent of the purchase price. As for channel conflict? Arhaus’s products are designed and manufactured specifically for the company.

One final twist is a hybrid model. LifeStyle Furnishings International, maker of the Berkline, Drexel Heritage,

Lexington, and Henredon brands, plans to use the Internet to answer customer inquiries and to channel customers to existing retail partners. LifeStyle Furnishings hopes that retail sales will be enhanced, helping to reduce channel conflict.

FurnitureChannel.com ([www.furniturechannel.com](http://www.furniturechannel.com)) is pursuing a similar model. The company works with local retailers by offering products from many manufacturers on its Web site. Customers interested in a particular item are

clicks players meld the best of both worlds into competitive strategies. The likely target market is 35- to 45-year-old working couples with relatively high incomes but little spare time. They will be attracted to medium- to high-quality furniture, guaranteed by the local retailer, delivered in a competitive time frame—but not at a particularly low cost. The second is what we call the IKEA model, named after the furniture company innovator. In this model, pure e-tailers sell low- to medium-quality products, with returns and repair paid by the customer. Product delivery would be fast, but variety would be limited. The target market is younger working individuals and couples from 25 to 35 years old.

Our framework for the furniture industry can readily be applied to any product or industry to evaluate competitiveness and understand supply chain weaknesses. For example, the toy industry also faces long leadtimes—in this case, from suppliers in Asia. Because customization is not an issue, both traditional and virtual retailers maintain inventory to compete on speed. Interestingly,

no one distributor supports the toy industry as the Ingram Book Company does for publishing. Thus, eToys has been forced to develop sourcing strategies and bear inventory risk just as KBkids and Toys “R” Us do. Bad inventory bets on hot products mean stockouts just as in the traditional model. Many investors missed this key tradeoff between supply chain delivery and cost and euphorically bet that Toysmart and eToys could replicate the book model for toys—a big mistake.

What have we learned about dot-com supply chains? Can e-tailers in the furniture industry—or any business segment—build competitive supply chains? Yes, they can. But they must pay attention to supply chain fundamentals like managing cost and controlling quality, while maintaining a delicate balance between flexibility and speed.

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EXHIBIT 4

Comparison of Order Fulfillment Costs

Channel	Relative Cost of Returns	Cost of Inventory	Cost of Repair	Cost of Shipping	Cost of Order Capture	Cost of Quality
Traditional Retailer	L	M	L	L	H	L
Pure e-Tailer	H	L	H	H	M	H
e-Tailer With Warehouses	H	M	M	M	M	M
Retailer on the Web	L	M	L	L	H	M

L=Low, M=Medium, H=High

directed to the closest retail partner. The customer enjoys the convenience of shopping at home, while the store handles local delivery and service. If the customer wants to touch and feel the product before buying, FurnitureChannel will again find the nearest store. The customer can order directly from the store or from the FurnitureChannel.com site.

This consortium model responds to the delivery and repair challenges faced by the pure e-tailers much as EthanAllen.com does. However, it allows for a broader product offering than Ethan Allen can. One problem with the consortium model is the possible impact on the retailer’s reputation. If a lower-end item is purchased online and handled by a retailer, how does that reflect on the retailer’s quality reputation? Brown Furniture, for one, balks at the prospect of risking its reputation by joining up. One answer is to carefully choose the manufacturers and retailers in the consortium—an approach being pursued by the startup EasyFurnish.

### Evaluating e-Tailer Supply Chains

Using our framework for supply chain competitiveness, it’s evident that e-furniture faces some formidable challenges. Order fulfillment costs are high (see Exhibit 4), quality management is more difficult than in traditional models, and there are few real flexibility and delivery advantages. Yet clearly there is a sizeable online market for furniture, and some models will survive. We believe that a few pure e-tailers will survive as niche players in the industry. Likewise, niche manufacturers will find the Internet profitable. Yet the supply chain economics indicate there is little chance of an Amazon or Dell appearing in furniture.

Two models hold the greatest promise for success. The first is the click-and-mortar approach, where bricks and

### Footnotes

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<sup>3</sup> Karpinski, R. “Levi’s Pulls Plug on E-Sales, But Retreat May Not Be Total,” *Internet Week*, Nov. 8, 1999.

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<sup>5</sup> Silver, E.A., Pyke, D.F., and Peterson, R. *Inventory Management and Production Planning and Scheduling* (3rd ed.). New York: John Wiley & Sons, 1998.