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**L.L. Bean's smarter stocking strategy**

**The iconic retailer has revamped its inventory practices to support a multi-channel selling strategy. The result: less overstock of seasonal inventory, more of the products its customers buy all year long, and a reduction in warehousing costs.**

**By** [**James A. Cooke**](http://www.dcvelocity.com/authors/James_A_Cooke/)

As it approaches its 100th anniversary, L.L. Bean Inc. is not the same type of retailer it was a century ago. The company started out as a manufacturer and seller of hunting boots, became a catalog merchant, branched into retail store sales, and now is involved in online retailing. Its evolution has prompted L.L. Bean, based in Freeport, Maine, USA, to modify its supply chain to reflect the many ways it does business today.

Five years ago, it became apparent that L.L. Bean's existing fulfillment strategy was causing inventory levels to rise. That led the company to take a hard look at its inventory and distribution practices.

The iconic retailer has since revamped its inventory policies with multi-channel sales in mind. A better understanding of product lifecycles together with improved forecasting helped it reduce overstocks of seasonal inventory, improve availability of products customers buy all year long, and reduce warehousing costs.

**It all started with a boot**
The story goes that Leon Leonwood Bean came back from a hunting trip unhappy because of his cold, damp feet. Bean hit upon the idea of stitching leather uppers to workmen's rubber boots to create more comfortable, water-resistant footwear for tramping through the Maine woods. In 1912 he founded the company bearing his name to sell his unique "Maine Hunting Shoe," working out of the basement of his brother's apparel shop.

A century later, the company still sells the original hunting boot (a 16-foot sculpture of one stands outside its flagship store in Freeport). Today L.L. Bean also offers hundreds of other products, including apparel for men, women, and children, footwear, and, of course, outdoor gear for camping, fishing, hiking, and other sports. Sales reached about US $1.5 billion in 2010.

L.L. Bean still produces its signature boots in the United States. It has two manufacturing facilities in Maine that make boots and tote bags and perform some customization of other manufactured products. Although the retailer sources 10 percent to 12 percent of its merchandise in the United States, the rest of its goods are made in Asia and Europe. "We try to source as close as we can (to Maine) where it makes economic sense to do so," says Vice President for Fulfillment Mike Perkins.

**Sales channels expand**
Over the course of nearly 100 years, L.L. Bean has diversified its sales channels. When Leon Leonwood Bean founded the company in 1912, he sold his boot through mail solicitation, which evolved into a catalog operation. Five years after starting the company, Bean opened a retail store in Freeport, Maine, which still exists today as part of a seven-acre retail campus.

Over the last two decades, L.L. Bean has expanded its retail presence at home and abroad. Currently it has 33 retail and outlet stores in the United States, located in the Northeast as well as in the Chicago area. The company opened its first international retail store in Tokyo, Japan, in 1992 and now operates dozens of stores in Japan and China. In addition, L.L. Bean sells online worldwide and mails its catalogs to customers in more than 160 countries.

Several years ago, the company separated its retail store and direct-to-customer fulfillment operations. Since then, L.L. Bean has operated two distribution centers (DCs), both in Freeport—one for retail, the other for catalog and online sales. "We wanted retail to own their inventory to do a better job of forecasting and sourcing product to the stores," says Perkins. "That's why we went down the road of two distinct inventory pools."

Shipping is also handled differently for each channel. Although customers who place orders online or through a catalog can select their preferred delivery method, about 90 percent of all direct-sales merchandise is shipped from Freeport by UPS, Perkins says. As for the retail outlets, L.L. Bean operates its own private fleet to supply its stores in the states of Maine, Massachusetts, and New Hampshire. It uses a variety of less-than-truckload carriers to serve its remaining stores in other parts of the country.

**Too much seasonal inventory**
In 2007, as L.L. Bean's Internet sales and retail network began to expand, the company decided to examine its distribution network to determine whether it could increase throughput capacity and avoid having to invest in a new distribution center. "Our fulfillment capacity was being challenged ... and we knew we were a couple years away from needing to do something," says Perkins. "We didn't want to invest more money in warehouse space when we could be investing that money in retail stores."

L.L. Bean worked with the consulting firm Fortna, which conducted a distribution network analysis. Philip Quartel, a Fortna consultant who worked on that project, says that the analysis encompassed transportation, capacity, inventory, distribution operations, stock-keeping units (SKUs), systems capabilities, and the impacts of any proposed changes on the overall business. Fortna analyzed data for more than 200,000 SKUs and more than 40 million order lines, which represented a year's worth of online, catalog, retail store, and businessto- business transactions. "Fortna looked at Bean from a service perspective and cost perspective, and at drivers like SKU counts, item variability, seasonality, and peak versus average days," Perkins recalls. "They took the system apart."

One of the most important findings was that the company's inventory levels were much too high. "They were carrying a bunch of inventory out of season in large quantities," Quartel observes. "Some of the SKUs were not [generating enough revenue to cover] the cost of handling them."

This discovery indicated that a different approach to inventory management was in order. "They needed to align inventory policy to service requirements," Quartel says. The solution, he explains, was to develop an end-to-end product lifecycle strategy that would segment demand and adjust inventory accordingly. "Based on the fact that certain SKUs did not require [a very high] fill rate and others would have a higher fill rate requirement, L.L. Bean could adjust their inventory position ... by determining the proper service level or fill rate per SKU," he says.

**Core and non-core products**
Fortna recommended that L.L. Bean segment its stock into "core" and "non-core" items. Core items are those for which there is fairly consistent demand all year. "Core inventory would be defined as things you don't want to be out of," says Perkins. "Core inventory in retail includes boots and denim jeans, which sell year 'round, day in and day out."

Non-core items, for the most part, included seasonal products, such as fleece jackets and snowshoes. L.L. Bean established a sales and inventory lifecycle for those items. As the season for a particular item winds down, it reduces the stock on hand and holds back on placing additional orders. "If it's snowing outside, toboggans are popular in the Northeast," Perkins says. "Around March, you don't want a lot of toboggans hanging around." To liquidate seasonal products, L.L. Bean advertises specials online and offers in-store price reductions. (The company does not have a lifecycle for core items.)

The company had an unusual problem when it came to rationalizing SKUs. Unlike some other retailers, L.L. Bean could not simply eliminate all of its slow sellers. Because the company has established its reputation as a provider of outdoor equipment for sportsmen, Perkins says, it has to carry certain products, such as jackknives, despite low sales volumes.

But the retailer *could* reduce the amount of stock it holds for these essential but slow-selling items and focus on carrying more core products. To help it optimize its inventory holdings and get the right mix of stock, L.L. Bean uses a software application it developed in-house to examine each item's profitability within the context of its lifecycle.

"The tool looks at all costs in providing profitability views," says Perkins. But, he adds, the retailer does not rely on this software exclusively to make decisions because "we have some items that may not be as profitable as others but are needed to round out our offerings to customers."

**Same variety, less space**
The results of the distribution network study led to some big changes in L.L. Bean's warehouse operations. As part of its lifecycle-based inventory strategy, the retailer has expanded its use of continuous replenishment. In the past, Perkins says, the company had done some continuous replenishment but often ordered large quantities of an item to keep in stock during a selling season. Now it is receiving smaller, more frequent shipments as needed from more of its suppliers.

The company also cut down on the amount of merchandise preparation that's done in its warehouse and instead began shifting that responsibility to its suppliers. How merchandise is prepared for sale depends on the sales channel. Consider a shirt as an example. If the shirt is intended for sale in a retail store, it will arrive at the retail distribution center folded in such a way that it will fit on a store shelf, bearing a price tag and an adhesive strip indicating the size. A shirt intended for online sale, by contrast, will arrive at the direct-to-customer DC with collar stiffeners and pins, which prevent the shirt from wrinkling during handling, shipping, and delivery.

Although L. L. Bean realizes that it costs more to maintain two inventory pools, it's sticking with that approach for now. "We understand that there's a cost involved with separate inventories, but we don't want to do a lot of the prep work ourselves," says Perkins.

As a result of having a better handle on its inventory mix and quantities, L.L. Bean has been able to avoid the need to construct another distribution center. In fact, the company has done so well in this regard, Perkins says, that this year it was able to close a 150,000- square-foot warehouse that it had leased for extra space for the past 20 years. The storage from the leased building was absorbed into the two main distribution centers.ding was absorbed into the two main distribution centers.

Focusing on product lifecycles does not mean that L.L. Bean carries less variety than it did in the past. Instead, it adjusts the amounts in stock to better match anticipated sales. In fact, thanks to targeted, more precise management of its stock, the retailer is now able to fulfill customer orders across multiple sales channels with little or no excess inventory. "We have a selling strategy to make sure that the customer gets what he or she wants, when he or she wants it," says Perkins, "but we don't want to be warehousing it when the season is over."

**Note:** This story first appeared in the Quarter 4/2011 edition of *CSCMP's Supply Chain Quarterly*, a journal of thought leadership for the supply chain management profession and a sister publication to AGiLE Business Media's *DC VELOCITY*.

View the You Tube video: <http://www.youtube.com/watch?v=o_t5spwDpl0>

Go Behind-the-Scenes at L.L. Bean with Rob Caldwell (approximately 6 minutes)

**Discussion Questions**

1. How successful has L.L. Bean been?
2. What are the reasons for L.L. Bean’s success?
3. What is happening to the business both positively and negatively?
4. How does L.L. Beach use past demand data and a specific item forecast to decide how many units of that item to stock?
5. What item costs and revenues are relevant to the decision of how many units of that item to stock?
6. How do they cut their warehousing costs?
7. How do they handle seasonality of inventory levels?
8. What is L.L. Bean doing differently than other warehouse manufacturers?

**SOLUTIONS**

1. **How successful has L.L. Bean been?**

L.L. Bean has been emerging as the market leader in mail-order companies that are specializing in outdoor apparel and equipments. As recorded by the company’s Customer Awareness Survey, it is the most well-known mail-order company setting the pace in the market with the reputation of having efficient delivery of good quality good s to the customers. From 1976 to 1980, the number of new L.L. Bean customers had been increased to 650,000; by 1980 sales had risen to over $120 million.

1. **What are the reasons for L.L. Bean’s success?**

a. Clear company positioning and strict compliance to that positioning: L.L. Bean provides high quality outdoor wears at fair price with great customer services.

b. It treats its customer with genial care and consideration like treating them as friends and neighbours especially with its free shipping and handling fee for customers‘ convinience;

c. Staffed with professional personnel

d. Great effort in marketing management and the notion of using ‘word-of-mouth’ as one of the marketing idea is really effective

1. **What is happening to the business both positively and negatively?**

Positively: the sales have been increasing after years of operation and innovation; increasing amount of inquiries from across the country and international distributors to invite L.L.Bean to conduct their business there.
Negatively: The transitional period when the company suffered from shortage of young talents, out-dated technology and slow growth; the successors--the next generation of the Beans will not be able to step into the business in the near future which can result the imbalance of management; the growth of new customers has not been significantly high

1. **How does L.L. Bean use past demand data and a specific item forecast to decide how many units of that item to stock?**

L.L. Bean uses several different calculations in order to determine the number of units of a particular item it should stock, whether it is a new item or a never out item. The first piece of data that is required is a point forecast for the item in the future period. This comes from the forecasting department, and is based off of the book forecast and past demand data. For a new item, there is a lot more judgment involved, especially with trying to estimate how much demand this new product will generate. This point forecast is then used in conjunction with the A/F ratio, which looks at an individual item’s past season’s forecast and actual demand. By calculating the A/F ratio, L.L. Bean can find the range of inventory that the product will be in the upcoming season after converting the point forecast into a demand distribution. For example, if there was a 50% chance that the forecast errors for last season were between .5 and 1.5, then it follows that those same distributions would occur in the future period. So in this example, the stock amount to order would be between 500 and 1500 units of that item. The third step in forecasting demand is to find the service level based off a profit margin calculation. L.L. Bean wants to look at what the probability of each unit bought is versus the amount they would lose if the unit were to be liquidated. They can then use this to calculate a fractile, which is used to determine the actual order size as long as it falls within the past period’s distribution. The fractile calculation must be done so we can see at what point it is optimal to hold the stock in order to balance overstocking and understocking costs, which then determines the number of units to stock.

1. **What item costs and revenues are relevant to the decision of how many units of that item to stock?**

The two main basic components that are relevant in determining how many units of an item that L.L Bean should stock are the cost of the item for L.L. Bean and also the price at which they can sell the item. Calculating these two figures, selling price minus the item’s cost, will give L.L. Bean their profit margin, which in turn relates to the cost of understocking. The annual cost for understocking in the case is $11 million. They also need to figure their overstocking costs. Taking the original cost of the item minus the liquidation value will give them the loss for failing to sell that item, in essence overstocking an item. L.L. Bean has an annual cost of $10 million for having too much of the wrong inventory, according to the case. Another cost that is involved with overstocking is the annual holding time of their facility when they keep inventory for the next year.