Made to Measure: Invisible Supplier Has Penney's Shirts All Buttoned Up

From Hong Kong, It Tracks Sales, Restocks Shelves and Ships Shirts Straight to the Store

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On a Saturday afternoon in August, Carolyn Thurmond walked into a [J.C. Penney](http://quotes.wsj.com/JCP) [jcp -1.58%](http://quotes.wsj.com/JCP) [**jcp**](http://quotes.wsj.com/JCP) **in** Your Value Your Change Short position store in Atlanta's Northlake Mall and bought a white Stafford wrinkle-free dress shirt for her husband, size 17 neck, 34/35 sleeve.

On Monday morning, a computer technician in Hong Kong downloaded a record of the sale. By Wednesday afternoon, a factory worker in Taiwan had packed an identical replacement shirt into a bundle to be shipped back to the Atlanta store.

This speedy process, part of a streamlined supply chain and production system for dress shirts that was years in the making, has put Penney at the forefront of the continuing revolution in U.S. retailing. In an industry where the goal is speedy turnaround of merchandise, Penney stores now hold almost no extra inventory of house-brand dress shirts. Less than a decade ago, Penney would have had thousands of them warehoused across the U.S., tying up capital and slowly going out of style.

The new process is one from which Penney is conspicuously absent. The entire program is designed and operated by TAL Apparel Ltd., a closely held Hong Kong shirt maker. TAL collects point-of-sale data for Penney's shirts directly from its stores in North America, then runs the numbers through a computer model it designed. The Hong Kong company then decides how many shirts to make, and in what styles, colors and sizes. The manufacturer sends the shirts directly to each Penney store, bypassing the retailer's warehouses -- and corporate decision makers.

TAL is a no-name giant, the maker of one in eight dress shirts sold in the U.S. Its close relationship with U.S. retailers is part of a power shift taking place in global manufacturing. As retailers strive to cut costs and keep pace with consumer tastes, they are coming to depend more on suppliers that can respond swiftly to their changing needs. This opens opportunities for savvy manufacturers, and TAL has rushed in, even starting to take over such critical areas as sales forecasting and inventory management.

On the weekend Ms. Thurmond made her purchase, the same Atlanta store sold two sage-colored shirts of similar size but of another Penney house brand, Crazy Horse. That left none of this size and color in stock at the store. Based on past sales data, TAL's computers determined that the ideal inventory level for that brand, style, color and size at that particular store was two. Without consulting Penney, a TAL factory in Taiwan made two new shirts. It sent one by ship, but to get one in the store quickly, it dispatched one by air. TAL paid the shipping but sent a bill for the shirts to Penney.

Instead of asking Penney what it would like to buy, "I tell them how many shirts they just bought," says Harry Lee, TAL's managing director.

TAL was born in 1947 after Chinese border guards blocked Mr. Lee's uncle, C.C. Lee, from importing state-of-the-art weaving machines to Shanghai for fear they would hurt the local textile industry. So the uncle set up shop in Hong Kong, then under British rule. With low-cost Asian manufacturing, TAL thrived. It supplies labels such as J. Crew, Calvin Klein, Banana Republic, Tommy Hilfiger, Liz Claiborne, Ralph Lauren and Brooks Brothers. Harry Lee, 60 years old, joined the family business 30 years ago after earning a Ph.D. in electrical engineering in the U.S. and serving a stint at Bell Labs.

Now, TAL is negotiating a deal to manage Brooks Brothers' shirt inventory the same way it does Penney's. For Lands' End, TAL stitches made-to-measure pants in Malaysia and flies them straight to U.S. customers, with a shipping invoice that carries the Lands' End logo.

These retailers have been willing to cede some functions once seen as central because TAL can do them better and more cheaply. Rodney Birkins Jr., vice president for sourcing of J.C. Penney Private Brands Inc., describes as "phenomenal" the added efficiency Penney has been able to achieve with TAL. Before it started working with TAL a decade ago, Penney would routinely hold up to six months of inventory in its warehouses and three months' worth at stores. Now, for the Stafford and Crazy Horse shirt lines that TAL handles, "it's zero," Mr. Birkins says.

With decisions made at the factory, TAL can respond instantly to changes in consumer demand: stepping up production if there is a spike in sales or dialing it down if there's a slump. The system "directly links the manufacturer to the customer," says Mr. Birkins. "That is the future."

Retailers across the board have sought to lower the amount of inventory they hold, both to cut costs and to reduce goods sold at a markdown. That means working more closely with suppliers. [Wal-Mart Stores](http://quotes.wsj.com/WMT) Inc. [wmt -0.33%](http://quotes.wsj.com/WMT) [**wmt**](http://quotes.wsj.com/WMT) **in** Your Value Your Change Short position has pioneered a system that opens its computer system to suppliers all over the world. Suppliers can track how their items are selling overall and even at individual stores. They can anticipate demand and communicate better with Wal-Mart buyers. But Wal-Mart still handles all the warehousing and distribution, and it stops short of allowing its suppliers to place their own orders.

The degree of power Penney turned over to TAL is radical. "You are giving away a pretty important function when you outsource your inventory management," says Wai-Chan Chan, a principal with McKinsey & Co. in Hong Kong. "That's something that not a lot of retailers want to part with."

Penney, too, was reluctant, and took the step only after building up trust over years of working with TAL. But Penney now has let TAL take the arrangement a step further: designing new shirt styles and handling their market testing.

TAL's design teams in New York and Dallas come up with a new style, and within a month its factories churn out 100,000 new shirts. For a test, these are offered for sale at 50 Penney stores. Not nearly all will sell, but offering a wide array of colors and sizes helps to provide a true test of consumer sentiment. After analyzing sales data for a month, TAL -- not Penney -- decides how many of the new shirts to make and in what colors.

Because TAL manages the entire process, from design to ordering yarn, it can bring a new style from the testing stage to full retail rollout in four months, much faster than Penney could on its own.

The system in effect lets consumers, not marketing managers, pick the styles. "When you can put something on the floor that the customer has already voted on is when we make a lot of money," says Penney's Mr. Birkins.

Like the retailer, TAL changed its methods in response to economic pressures. TAL has seen the price of its shirts fall almost 20% over five years as low-cost textile manufacturing exploded in China's Guangdong province. It could jump even more in 2005, when textile-importing nations such as the U.S. must complete a phaseout of import quotas for countries in the World Trade Organization. Most of TAL's manufacturing is in places with higher wages than Guangdong, such as Thailand, Malaysia, Taiwan and Hong Kong. So "our customers need a reason to buy from us," Mr. Lee says.

Learning by Failing

TAL learned the supply-chain business the hard way. In 1988, a U.S. wholesaler that handled its shirts, Damon Holdings Inc., failed. Mr. Lee, fearing a loss of sales and figuring he understood the wholesaling business, bought Damon. The result was "a big shock." A manager TAL had put in charge of Damon went on a buying spree, and soon its warehouses were crammed with two years' worth of shirt inventory that was going out of style. Shirts that cost $10 to make had to be sold for $3. By the time TAL closed Damon in 1991, it had lost $50 million.

But the experience started Mr. Lee thinking about a way to do business more efficiently, by linking his Asian factories directly with U.S. stores. "The failure gave us a head start," he says.

Around the same time, TAL had begun supplying Penney with house-brand shirts. Mr. Lee saw that Penney was holding up to nine months of inventory, twice what most competitors kept. "You didn't have to be a genius to realize you can do a lot better than that," he says. Visiting Penney headquarters in Plano, Texas, he floated a radical solution: Why not have TAL supply shirts directly to Penney stores instead of sending bulk orders to a Penney warehouse?

Mr. Birkins was skeptical. But he saw that savings could be huge. It cost Penney 29 cents a shirt to have its warehouse workers sort out orders in the U.S. TAL could do it for 14 cents.

And such a system would let Penney respond more quickly to consumer demand. This had been a problem for the retailer, which often needed months to restock hot-selling styles. Stores ended up missing sales of these styles while holding less-popular models that they had to move at a discount.

Mr. Birkins pitched the idea to his Penney bosses. It met a brick wall. Each division found fault with it. Executives who ran warehousing said the plan could prove disastrous if TAL didn't deliver on time or to the right stores. Technology people worried that the computer systems wouldn't be compatible. The plan sat for several years, until a senior Penney manager began a push to improve efficiency by reducing inventory across the board. "We used that as our wedge," Mr. Birkins says. "That turned it."

It took TAL a year to set up the system in Asia. Mr. Lee then began by supplying a single Penney store in Kansas City, Mo. He enlisted a Chinese numerologist to choose an auspicious day: June 20, 1997. Factory workers toasted the occasion with champagne. Things went smoothly, and within months, TAL was delivering shirts directly to all of Penney's stores in North America. Inventory levels dropped.

There was one clear downside: If a store sold out of a style of shirts, it couldn't quickly get some more from a regional warehouse. So TAL agreed to sometimes send shirts to stores by air freight -- a costly step but one TAL would take to keep the customer happy.

Soon Mr. Lee saw another opportunity. Penney's sales forecasts often missed, sometimes overestimating shirt needs by as much as two months' worth. Sales forecasting is one of the most difficult tasks for retailers, yet one that's increasingly important to get right as inventories get tighter. Penney blames the problem on older-generation software.

Convinced he could do better, Mr. Lee pitched an even more outlandish idea: Why not let TAL staff in Hong Kong forecast how many shirts Penney's stores would need each week? This time, Penney executives were listening.

Mr. Lee was operating on a simple premise. If he could get sales data straight from the stores, he could take the consumer's pulse and respond instantly, ordering more fabric and increasing production where needed. Penney buyers would just be in the way. "I can do all the pieces of the puzzle," he says.

On 'Autopilot'

He hired dozens of programmers, who designed a computer model to estimate an ideal inventory of house-brand shirts for each of Penney's 1,040 North American stores, by style, color and size. Penney provided him with goals for how often stores' inventory should be replenished, then stepped back and let him do the rest. "It's on autopilot," says Mr. Birkins, "and TAL is the autopilot."

TAL's computer model began to outpace the Penney system still used for the retailer's other merchandise. For some shirt models, stores could now keep half a much in stock as they had previously.

The system hasn't been flawless. Ming Chen, a manager at TAL's Taiwan factory, recalls a few occasions when TAL underestimated Penney's needs significantly. She says the factory "sacrificed other customers" to rush out Penney's order first and sent some shirts by air freight to be sure they arrived on time. Costing 10 times as much as ocean shipping, sending shirts by air was "a painful decision," she says. "But sometimes you have to decide which customers you're going to take care of."

Sitting in his Hong Kong headquarters, in a neighborhood whose factories have given way to office space, Mr. Lee is thinking of ways to push his idea to the next level. He would like to form a joint venture with Penney that would manage the supply chain for some other manufacturers that supply the retailer. TAL has already started doing this with underwear. "Why not consolidate it all here?" he asks.

Mr. Birkins says Penney is seriously considering the idea

—Dan Morse contributed to this article.

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