

Inventory Depletion—Fight Back With Facts

An exploration of issues ranging from theft to quality factors related to laundering, raw materials & manufacturing



By Sam Garofalo

As I walked into a client’s office, he excitedly exclaimed, “These new sheets that we just bought will get 300 washings! I won’t need to buy new sheets for four years...” I swallowed hard and held my breath. There are so many circumstances beyond the control of a manufacturer that it’s impossible for them to give an accurate estimate of the longevity of inventory.

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Projecting the useful life of textiles is meaningless, unless you first consider each of the key parameters. In most cases, once the linen’s in the system it’s a forgotten issue until the laundry calls and tells the customer that they’re spinning the product in 24 hours to meet demand. Then your customer says, “That’s impossible! I just bought linen a year and a half ago.”

The reality is that by the time quality or quantity issues materialize, it’s probably too late. End users and their laundry partners need to ad-

dress inventory issues before they’re a problem. Among the key challenges they face are:

THEFT

On a flight home from a week in Las Vegas, where I was addressing this very issue, I noticed that the row I was sitting in had two couples returning from a vacation. The ladies on both sides of the aisle had these awesome new towels covering their legs. I quickly went into undercover mode. The couples were from different parts of the East and didn’t know each other. In one row on a 31-row plane, six abreast (198 passengers in all), there were two towels. It would appear that not everything that happens in Vegas stays in Vegas! So what’s the biggest cause of linen losses? Without exception, theft is the main culprit in linen inventory depletion. Industry studies have estimated that 80% of linen replacement costs are the direct result of theft. Hospitality linen dollar losses are higher because the products are of better quality and more expensive.

RAW MATERIALS ISSUES

These include everything from short staple fiber, green cotton, to the use of rag cotton to supplement good fibers. As the nearby chart shows, during the past decade, prices for cotton used in textile goods have increased dramatically, though they recently began to stabilize. Last year’s sudden spike in cotton prices sent fabric

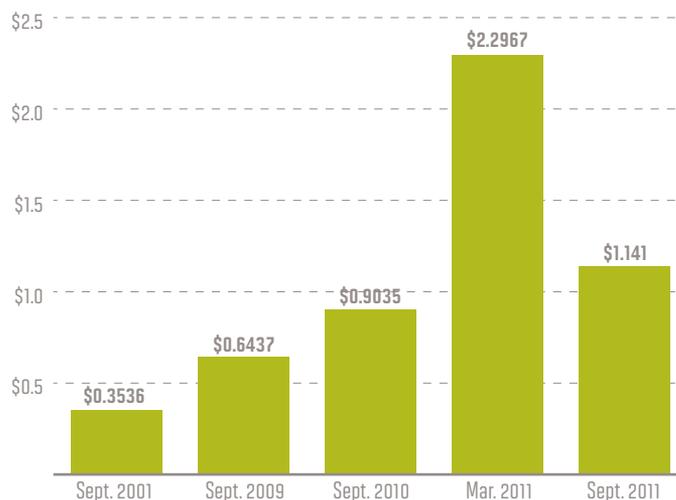
manufacturers in the Orient scrambling for raw materials to produce their products. Sadly, the phrase “follow the money” is almost always true, as manufacturers’ problems ultimately get passed down to end users. Another result was that a lot of fabric entering the country in the last 15 months was of dubious quality as rogue cotton fetched record prices.

MANUFACTURING ISSUES

If you’ve ever visited a fabric mill, you’d see what an unbelievably complicated process it is. Many different machines are used, including carding, yarn spinning, weaving, washers and dyeing equipment. Some of this machinery has thousands of different moving parts. The commitment to build a manufacturing plant can cost upwards of \$1 billion. Much of that investment goes to quality-control procedures aimed at guaranteeing that the product going out the door is 100%. Unfortunately, at this level of complexity and mass production, it isn’t surprising that problems can and do arise. Imagine a machine that weaves a bolt that’s as long as, or longer than, two football fields.

Fabric is woven using a centuries-old technique of setting a warp and then shuttling a weft (fill). In the old days, a foot pedal was used to power these machines. Today, this equipment is automated and computerized. That allows for the production of intricate patterns and weaves. I’m baffled that manufacturers are able to control the process as well as they do. However, they aren’t perfect. One ‘burr’ can cause a flaw in the fabric that can be fatal to one sheet or

COTTON PRICE TRENDS: 2001-2011

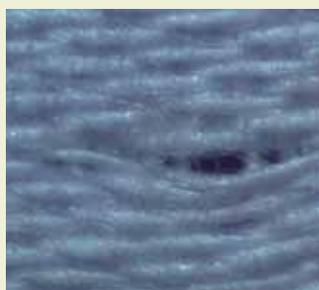


1,000, (see photo: broken yarn and the result). Other issues shown nearby are weft (fill) yarns that were chemically damaged before the weaving process. Some defects involve the chafing of high thread-count fabrics and improper final pH, which can cause the fabric to degrade in shipment and storage before it’s distributed.

Most recently, we’ve seen grab tests with lower-than-normal fill strength. Ultimately, that will cause the fabric to fail. A sheet typically will lose 3% to 4% of its’ tensile strength each time it’s washed. A new sheet grab test performed in our lab found that fabric ruptured in the fill direction at

TEXTILE TROUBLE A number of issues can arise that can take a toll on textile goods. For example (l/r below), fabric flaws during production can threaten one or more sheets in a group; these “burrs” tend to quickly grow more severe after repeated washings; misuse of chlorine bleach or improper pH levels during washing can cause textiles to deteriorate prematurely.

MANUFACTURING ISSUES



Manufacturing defect on new sheet.



Same defect after several washings.

LAUNDRY ISSUES



Chlorine damage.



Acid damage.



32.016 lbs. The weakest direction is the weakest link. Regardless of manufacturer claims, a sheet is only as good as its certified grab test from a random sample of product.

LAUNDRY ISSUES

Like the fabric mills, today's commercial laundries typically are highly automated. They use computer-controlled washer/extractors and tunnels, chemical-injection systems and finishing equipment that's designed to avoid damaging the fabric. The chemical systems inject alkali, detergent and an oxidizer (usually chlorine, or peroxide), sour and softeners. These chemicals are very similar to ones used during the manufacture of linen. This duplication of processes in the mill and the laundry is one of the biggest problems in damage assessment. Did the problem occur during manufacturing, or in the laundry wash process? Just as the manufacturers have ways of ensuring the quality of their products, so do laundries. Technicians from the laundry chemical company will visit the site regularly—sometimes once a week. During these visits, the technician performs tests to verify that the chemistry and other washing parameters are being met. Laundries also can run pieces through the machine if a problem arises, or there's a need to supply a property with validation. There is no question that the washing standards in a commercial setting are much more exacting than at home. A typical "swatch test" will show less than 1% tensile loss in a home washer. However in a commercial setting, we look for 4% in light soil. Water tem-

peratures, mechanical action and chemical concentrations in a commercial setting are aimed at removing everything, from body soils, to killing bed bugs, etc. In other words, just looking clean isn't enough. It has to be hygienically clean and free of stains. This responsibility falls squarely on the chemical technicians' shoulders.

INVENTORY DEPLETION

The lack of a good inventory-control system is a nightmare that can creep up on users. As the linen inventory depletes due to theft and accidental damage, etc., the remaining inventory has to fill the gap. A sheet that under proper inventory guidelines may be washed once a week, will do double or triple duty until it's getting washed every 24 hours. This brings us to what many believe is an old wives' tale. "You need to give the linen a day to rest." You don't hear this as much as you did 25 years ago, thanks to blended fabrics and better technology. The simple truth is that bone-dry cotton coming out of a flatwork-finishing machine at 150° F-plus, is brittle and subject to fiber damage. That heat and lack of humidity is a cotton killer. It isn't uncommon to find sheets on linen carts on the hotel floors that still retain heat. Cotton fibers that have had a chance to cool on a shelf to room temperature and rehydrate to the working environment are more durable. "Cooled and rehydrated," is a better choice of words for this anomaly. That's why ASTM grab sample testing requires that linen samples that undergo testing are brought to 65% humidity and 70° F for testing. When you factor in the impact of this processing issue, it's clear that maintaining an inventory (par level) of less than two will deplete your linen stock exponentially faster because there isn't time for the goods to cool down and reacclimate to the environment.

BOTTOM LINE?

You can maximize linen life and reduce inventory depletion by understanding and doing what you can to address the problems outlined above: theft and defects related to manufacturing, raw materials and laundering. You should always temper the claims of textile manufacturers against the realities of linen use in a commercial environment. Accept up front that these goods could wear out sooner than predicted, and advise customers to set par levels accordingly. If you approach the issue of linen depletion with a firm grasp of the facts surrounding the linen lifecycle, you can take steps to enhance your ROI on these products. **TS**

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