Next for textiles

Amy Martinez
Staff Writer
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Textile industry experts say the future won't depend on more workers working harder, as has historically been the case, but fewer workers, each working smarter.

Behold Exhibit 1: The super-duper Freudenberg Microfaser Plus wipe, made from polyester and nylon fibers that have been melted into a nonwoven cloth that can be used to clean mirrors, sinks and stovetops, without leaving scratches or lint behind.

No, it won't bring back the nearly 100,000 textile jobs lost in North Carolina during the past decade, but experts are calling it a lifesaver, of sorts, for the industry -- a way to leverage some advantage over foreign competition.

Similar technology is being used to make leak-proof diapers, baby wipes, fabric softeners, surgical gowns, air-conditioning filters, even an Oral B pouch for cleaning teeth.

"This industry is going to be a lot more diverse and a lot more interesting than just manufacturing fabrics," said Behnam Pourdeyhimi, who oversees a lab at N.C. State University called the Nonwovens Cooperative Research Center, where machines turn out more than 300 yards of material a minute, 1,200 times faster than the typical weaving loom.

"It requires significant capital investment and technology that's not readily available in developing countries," said Pourdeyhimi (pronounced Pour-de-himi).

Indeed, the fact that many of these products rely on advanced technologies -- as opposed to large labor pools -- lessens the chance that they'll be made in low-cost countries such as China, where many of North Carolina's manufacturing jobs have gone in recent years. Pourdeyhimi says they create well-paying opportunities for engineers, designers and marketing professionals, as well as displaced mill workers who upgrade their skills.

Freudenberg, the German company that makes the Microfaser Plus, doesn't manufacture the cloth in North Carolina, but it hopes to soon, said Pourdeyhimi. Freudenberg already makes carpet backing for automobiles at a 450-worker plant in Durham.

"We have 11 different industry sectors that we concentrate on, and textiles is one of them," said Ray Denny, a business recruiter for the state Department of Commerce. "We will never see 160,000 North Carolinians employed in the textiles sector again. And that's sad. But there's no reason we shouldn't see a significant number employed again."

Denny and his team of economic developers have attracted several new textile companies in the past year:

- Jacob Holm Industries, a Switzerland maker of roll goods for baby wipes, cosmetic cloths and household cleaning towels, said in July it will add 70 jobs and invest $40 million at a new plant in Asheville.

- Livedo Corp., a Japanese maker of disposable medical products, will begin production by year's end in Wilson, creating 75 jobs and investing $35 million.

- AFG Wipes, an Israeli maker of wet wipes, announced plans in November to create 200 jobs and invest up to $30 million in Rockingham County.

Even so, the job losses are not over for North Carolina's textile industry, which still has nearly 80,000 people employed. On Jan. 1, the United States is scheduled to eliminate quotas on all textile imports from developing nations, exposing domestic manufacturers to more foreign competition. Gary Shoesmith, an economist at Wake Forest University, said the state will lose 40,000 more textile jobs in the next five to 10 years.

"We just don't need many people, because what's left is automated," Shoesmith said. He predicts that by the end of this decade, the only textile companies left will be those that cater to a particular market, such as auto manufacturers and medical professionals. "A lot of companies have been busy trying to crank out yarn and fabric. That's not going to be produced here anymore," he said.

Experts consider North Carolina an attractive place for new textile companies because of its reputation as a technology hub. Also, NCSU is the only university in the United States with a college devoted to textiles. Founded in 1899, the college has about 50 faculty members and 600 undergraduate students. This fall's enrollment has many as 170 freshmen, up from 115 two years ago. Many of the students are drawn by the technology behind new textile products, said spokeswoman Emily Parker.

Pourdeyhimi knows of 29 companies making nonwoven products in North Carolina, as well as 70 that support them, such as distributors and packagers. Overall, the nonwovens industry generates about $3 billion in annual economic activity for the state, and it is growing at a rate of up to 8 percent a year, Pourdeyhimi said.

Perhaps just as important, the United States exports more nonwoven products than it imports. Last year, domestic manufacturers exported 214,500 tons compared with imports of 127,600 tons according to the Association for the Nonwoven Fabrics Industry, a national trade group based in Cary.

"People think the textile industry is disappearing, but it's not," Shoesmith said. "It's just the high-labor products that are disappearing. The technologically advanced products are prospering."

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COMPANIES IN NONWOVEN FABRICS

Textile companies such as Pillowtex, a maker of sheets and towels, helped shape the state's economy during the 20th century. But many of them are sending jobs overseas, or in Pillowtex's case, going out of business due to foreign competition. A new type of textile company may lead the industry's future in North Carolina.

NANO-TEX

PRODUCTS: Uses molecular bonding to create chemicals that allow clothing to repel stains or control moisture.

EMPLOYS: 15 in Greensboro; 50 in all.

FOUNDED: 1998 by **Burlington Industries**.

QUOTE: "One of our brands saw a 60 percent increase in sales from one year to the next, after introducing our technology into its shirts." -- Renee Hultin, president.

FREUDENBERG

PRODUCTS: Makes nonwoven materials used in a wide range of products, including apparel linings and carpet backings for car interiors.

EMPLOYS: 450 in Durham, 30,000 worldwide.

FOUNDED: 1850 as a tannery in Weinheim, Germany. Durham's nonwovens plant opened in 1984.

HOW THE NONWOVEN INDUSTRY DIFFERS FROM TRADITIONAL TEXTILE MANUFACTURING: "It's more capital-intensive than labor-intensive. A new spunbond polyester production line would cost $40 million. A textile loom would cost less than $1 million." -- Lee Sullivan, global manager for Freudenberg's Tuft carpet-backing business.

ATEX TECHNOLOGIES

PRODUCTS: Makes textile components for medical devices such as heart valves, hernia meshes and incontinence slings.

EMPLOYS: 30 in Pine Bluff.

FOUNDED: 2003 by Aberdeen-based McMurray Fabrics.

WHY JOBS AREN'T LIKELY TO GO OVERSEAS: "Our customers like having their suppliers readily available for any audits or compliance issues. This is something that's going to be implanted in a person." -- Martin Monestere, vice president

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NEW TECHNOLOGIES FROM NCSU

Two of the nation's fastest-growing sectors, health care and security, are providing new opportunities for textile engineers at N.C. State University. Here's a look at some technologies being developed at NCSU's College of Textiles:

WHAT: A suture with little barbs pointed in opposite directions.

WHY: Stays in place without the use of knots, reducing the likelihood that patients will scar after surgery. Most scars form near the areas where knots are tied to hold sutures in place.

WHO'S INTERESTED: Cosmetic surgeons.

WHEN: Quill Medical at Research Triangle Park is conducting clinical trials and could begin distribution in two years.

WHAT: "Scaffolds" for growing human cells.

WHY: Textiles are considered ideal for building scaffolds that someday might be used to build new organs for patients suffering from heart or kidney failure. Now, those patients must wait for organ donations, often at great risk to their lives.

WHO'S INTERESTED: Physicians looking for new ways to treat injury and disease.

WHEN: Martin King, a medical textiles expert at NCSU, thinks the scaffolds will be used 10 years from now.

WHAT: Bulletproof vest made with super-strong fibers about one-hundredth the thickness of hair.

WHY: Most bulletproof vests are bulky and uncomfortable, but scientists think they can develop a soft, pliable material that would stiffen on impact, preventing bullets from passing through. Picture a bulletproof T-shirt worn under a uniform or business suit.

WHO'S INTERESTED: The U.S. military, police, firefighters, and possibly public officials.

WHEN: A prototype may be available in five years.

Lab manager Stephen Sharp and research specialist Alvin Fortner work to start a machine to make nonwoven fabric at the Nonwovens Cooperative Research Center at N.C. State University.; Staff Photos by Mel Nathanson; Detail of a bicomponent textile fiber using polyethylene and polypropylene at NCSU.; Strands of polypropylene at a molten 400 degrees stream from a plate on a machine making nonwoven fabric at the Nonwovens Cooperative Research Center at N.C. State University. The machine was warming up for a fabric test.; Staff Photo by Mel Nathanson; **Nano-Tex** is popular with retailers like Eddie Bauer.; **Nano-Tex**