REACH Technologies
Customer Solution Case Study

# Integrated Solutions Increase Efficiency and Reduce Waste in Clothing Manufacturing

## Overview

Country or Region: India
Industry: Manufacturing

### Customer Profile

Bangalore, India–based Vigosa Exports is a midsizemanufacturer of clothing for buyers around the world. Its products are sold in C&A stores in Europe as well as Wal-Mart, Target, and other stores in the United States.

### Business Situation

Vigosa wanted to find a way to reduce the amount of waste at the end of a long roll of fabric. It needed a solution that would optimize the layout of clothing parts to be cut from a fabric roll.

### Solution

Vigosa implemented REACH CAD and REACH Cut Planner

### Benefits

- 625 percent faster pattern resizing
- Dramatic reduction in resizing errors
- Up to 2 percent increase in roll yields
- 5 percent less fabric required
- Improved inventory accountability

"This solution maximizes our use of fabric. … We're getting between 0.5 and 2 percent more garments out of the same fabric rolls."

Sunil Masand, Managing Partner, Vigosa Exports

Vigosa Exports wanted to increase the efficiency with which it manufactures clothing for buyers in the United States and Europe. By deploying a suite of products from REACH Technologies, Vigosa has reduced fabric consumption by as much as 5 percent per order. It has decreased the time to resize clothing patterns from 30 hours to 4 and all but eliminated resizing errors. And it has gained the ability to optimize the allocationfo pattern layouts to fabric rolls, which has increased the overall yield of fabric rolls by as much as 2 percent. Over the course of a year, these improvements add up to a significant improvement in Vigosa's profitability.

REACH Technologies

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## Situation

Even in the age of high technology, the intricacies of clothing manufacturing still involve innumerable manual processes. Clothing designs are often initially drawn by hand—and drawing a detailed pattern might take 24 hours or more. An individual might then take that master pattern and resize, or grade, a "medium" to its small, large, and extra-large dimensions—a process that could take a grader one to two more days, particularly if the grading needs to be redone in order to fix a resizing error. Then, all the pieces in the pattern must be laid out in a "marker," which shows a cutter just where to cut the pieces from a swatch of fabric.

Because fabric constitutes 60 to 70 percent of the cost of clothing, manufacturers want to ensure that they optimize their use of fabric. But in a manual world, no one really has time to optimize the layout of markers in order to get the most clothing out of each roll. A company such as Vigosa Exports, based in Bangalore, India, might receive hundreds of rolls of fabric to meet a customer order, and few if any of those rolls will be of equal length. One roll might be 100 yards long; another might be 101.36 yards long. While the cloth manufacturer does provide detailed information about the length of each roll, the huge amount of variation always made it simpler for Vigosa cutters to roll out the fabric and just start cutting markers, without regard for the amount of waste that might result at the end of a roll.

Vigosa managers wanted to find a way to optimize manual processes. They wanted not only to design clothes faster, but also to minimize waste on the cutting-room floor. If they could accomplish both goals, they could deliver clothing to their customers faster, which would improve customer sales and repeat business. If they could optimize fabric use, they might be able to order less fabric and still meet customer orders—thus lowering their largest single cost and thereby increasing company profitability.

## Solution

Turning to REACH Sewn Technologies & Consulting, Vigosa found two applications that could help it optimize fabric use and reduce the time required to fulfill customer orders: REACH CAD and REACH Cut Planner (RCP).

**Design Automation**

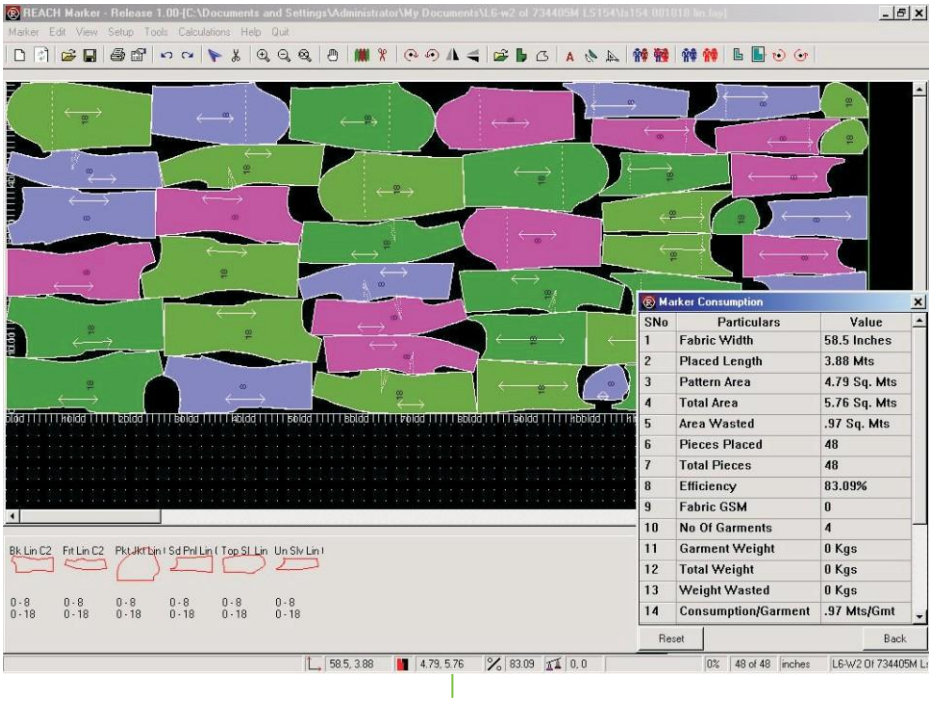
REACH CAD is a software tool for pattern engineering, grading, and marker planning. It helps minimize fabric consumption and facilitates supplying the sewing lines with accurately cut parts. It automates a range of design processes, including pleat turning and balancing, grain line adjustments, pattern flipping, seam allowance adjustments, grading, and many others.

Using a REACH CAD Web service, fashion designers in the United States and Europe can upload precise information about garment fit to Vigosa. Once that information is in REACH CAD, the pattern designer at Vigosa uses the automation features to grade the pattern prototype to required sizes (S, M, L, and so on). REACH CAD can lay out pattern markers for optimal fabric use and even optimize piece positioning to line up plaid and stripe patterns (the designs for which can be scanned into REACH CAD for analysis). REACH CAD can send patterns and markers directly to a plotter for pattern/marker printing; it can also send output directly to an electronic cutting machine.

### Cut Planning

RCP performs the complex calculations that enable Vigosa to optimize the yield from each roll of cloth. The solution has a Web service that enables a fabric manufacturer to upload information about the fabric rolls it is shipping to Vigosa (including roll width, length, and so on) as XML input. RCP can also import this information from a Microsoft Word or Microsoft Excel document, as well as accept XML input from REACH CAD that describes the markers to be cut from the roll. RCP takes the marker information, plus the information about the individual rolls, and determines which combination of markers should be cut from each individual roll to minimize waste and meet a customer's order.

With REACH CAD, Vigosa can quickly lay out markers from differently sized clothing patterns to optimize fabric use.




### Flexible Infrastructure

REACH CAD users can create patterns and markers in one or more locations and share them with one or more cutting rooms located anywhere in the world. Similarly, an RCP report for one line of clothing can be distributed to one set of cutting rooms, while an RCP report for another line of clothing can be distributed to another set of cutting rooms on a different continent.

## Benefits

For Vigosa Exports, the new solution is providing many benefits. With the help of REACH CAD, the manufacturer is saving significant development time and effort, and pattern designers are far more productive. With REACH Cut Planner, Vigosa is reducing fabric waste as well as improving roll yield, inventory management, and company profitability.

### Improving Productivity With REACH CAD

Vigosa has increased the efficiency with which it can create a pattern and prepare that pattern for production. With REACH CAD, a pattern designer can create a pattern, grade it to all its sizes, and prepare it for cutting in as little as 4 hours. To accomplish the same thing manually would take between 20 and 30 hours—and then only if there are no errors.

"REACH CAD is working brilliantly for us," says Sunil Masand, Managing Partner at Vigosa Exports. "Once the pattern has been approved by the buyer, REACH CAD grades it perfectly to all the other sizes. All the mistakes associated with grading a pattern

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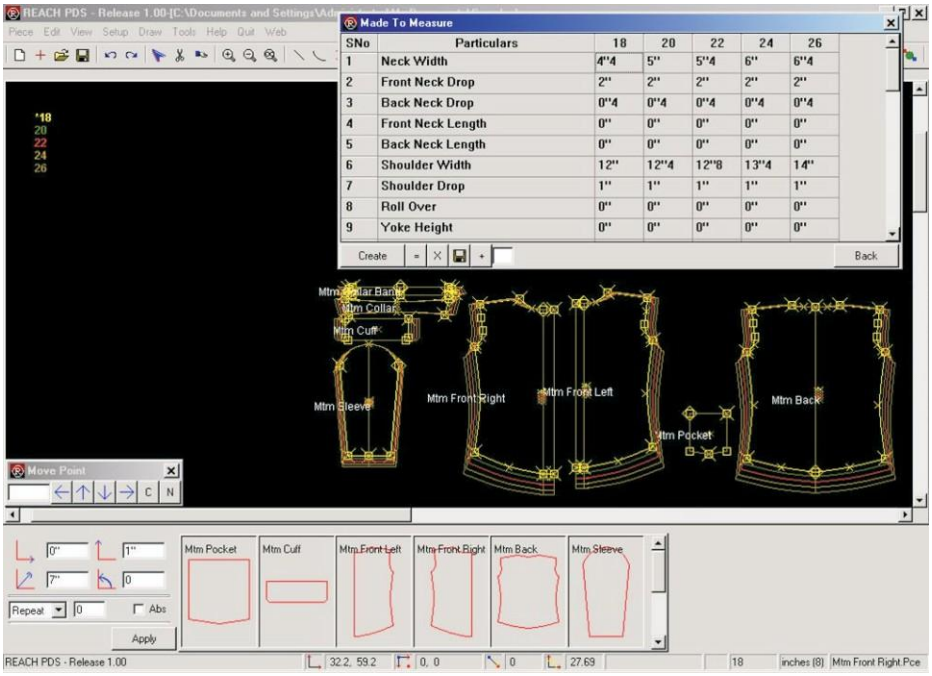
Sunil Masand, Managing Partner, Vigosa Exports

manually have been eradicated. It used to be that we wouldn’t discover a grading problem until we sewed a test garment. Then we would have to go back and fix the pattern and resew a test garment—and that would take another day or two. REACH CAD can save us one to two days of work right there. We still check to make sure our grading is correct, but 99 percent of the time it’s perfect.

“Our pattern makers now have time to do more things, to develop more styles,” says Masand. “It’s a great productivity enhancement.”

**Reducing Waste With REACH Cut Planner**

Automated grading and optimized placement of garment pieces within a marker are powerful benefits, but optimizing the mapping of the markers to the different rolls of fabric is the key to optimizing fabric consumption and lowering costs. With RCP, Vigosa cutters know just which combination of markers to use to get the most out of each roll of fabric.

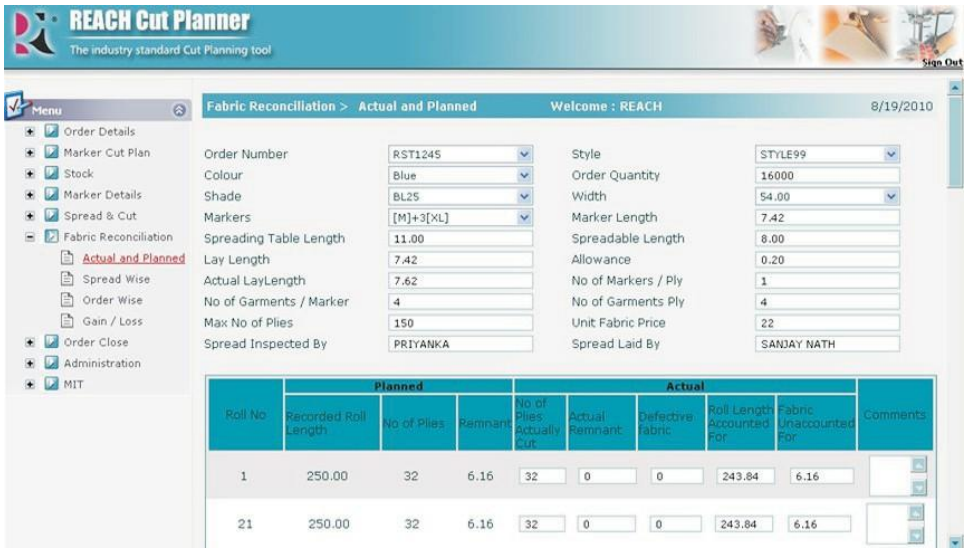


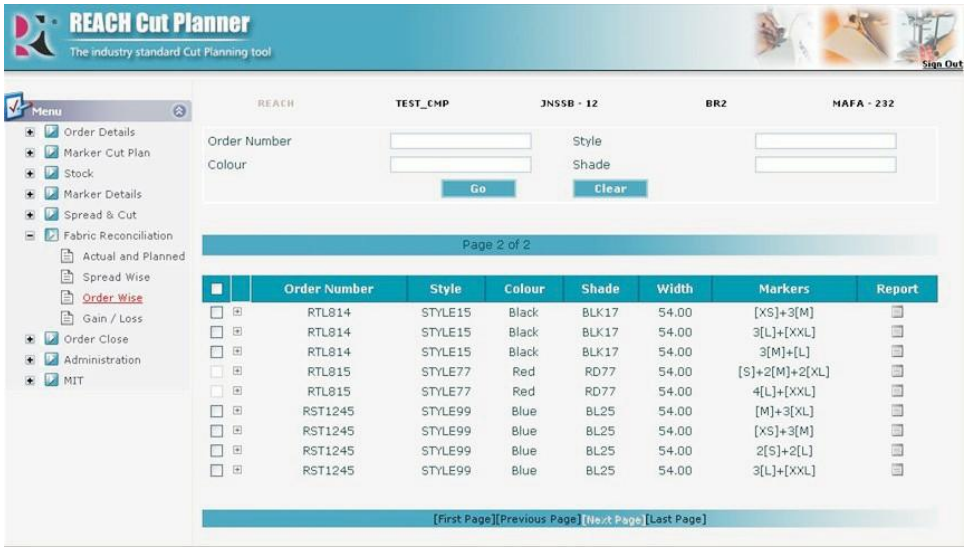

REACH CAD automatically grades new clothing patterns to the entire selection of sizes.

## For More Information

For more information about REACH Sewn Technologies & Consulting products and services, please email :info@reach-tech.com or visit the Web site at: www.reach-tech.com

"This solution maximizes our use of fabric," says Masand. "It allocates a fabric roll to a marker length, thereby minimizing the end bit of each fabric roll. For Vigosa, that has improved fabric use by between 0.5 and 2 percent—which means we're getting between 0.5 and 2 percent more garments out of the same fabric rolls."




Masand notes that it would be possible to cut each roll so as to minimize end bits without a tool like RCP, but it would involve so much preparation work that it simply would not be cost-effective to do it. "You could spend a whole day figuring out how to optimize fabric use for just a small order—let alone a large one—so it simply would not be worth doing. Once you've got the roll length details into RCP, RCP figures out what to do in a matter of seconds."

Realizing Bottom-Line Benefits

RCP delivers other benefits to Vigosa as well. Built-in stock accounting features enable Vigosa to account for each fabric in inventory, which helps the company eliminate theft of fabric rolls. "We might have more than 500 rolls in stock at any time," says Masand, "so having a system in place to account for every roll is an added benefit."

With optimized marker layout and mapping to fabric rolls of differing length, Vigosa has found that it can reduce fabric consumption by as much as 5 percent per order. "When you add up the savings over the course of a year," says Masand, "a 5 percent savings in fabric per order is significant. I'm now wondering why we didn't do this a long time ago."