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## Case Study

# The Limited Sees its Customers More Clearly Now

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### How a video-based customer-counting system increased data accuracy by 42 percent

#### Traffic data held the promise of significant competitive value

For The Limited, an established U.S. women's fashion retailer with 220 stores and 2,600 employees, finding better ways to manage and improve customer service, staffing levels, merchandising effectiveness and profitability is key to continued success.

As with all retailers, The Limited maintains a careful balance between staffing and cost, ensuring enough salespeople are on hand so that customers aren't kept waiting, but without overstaffing to the point of inefficiency and decreased profits.

"We need enough staff at any given time to communicate with customers, help them find their size, and maybe try on some different outfits," said Roger Coville, chief information officer at The Limited. Such personal attention and overall experience helps convert store traffic into sales, and builds customer loyalty.

The more timely and accurate the customer traffic data is, the easier it is to maintain proper staffing levels. For years, The Limited generated this critical information manually, via store estimates and hand counters. The main goals: keep the staff-to-customer ratio fine-tuned to minimize labor costs while maximizing the customer experience; compare the traffic count to sales to understand how well each store converts visitors to buyers; and ultimately, be more profitable.

### CUSTOMER PROFILE

Customer Name: The Limited  
Country: United States  
Industry: Retail, Fashion  
Founded: 1963  
Number of Employees: 2,600

### CHALLENGE

The Limited needed a more accurate way to count customer traffic in its stores so that management could improve customer service, staffing, merchandising effectiveness, and ultimately profitability.

### SOLUTION

A video management system from Dell partner DIGIOP Technologies, running on customized Dell™ OptiPlex™ computers, enables The Limited to accurately capture and then analyze in-store data to maximize the customer experience while minimizing labor costs.

### BENEFITS

- In-store customer traffic count accuracy is improved by approximately 42 percent with the Dell PC-based DIGIOP system, enabling improved staffing management
- The Limited sees higher conversion rates after using data from the DIGIOP system to better match staffing levels to demand
- The flexible, expandable Dell PC-based system enables easy addition of other video analytics and loss-prevention capabilities, as well as point of sale and time-and-attendance system integration in the future.

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With new technology opportunities, it became clear that there were better solutions than manually gathering and analyzing data.



The integrated system enables The Limited to capture and analyze in-store data to optimize the customer experience while minimizing labor costs.

## The need for an accurate automated system

The Limited wanted an automated in-store traffic counting and analysis system that could help managers keep stores staffed with the optimum number of employees, enhance the customer experience and maximize sales.

Because its stores are small, with just a few salespeople at any given time, The Limited sought a system that delivered highly accurate traffic counts to manage personnel optimally throughout store hours.

In addition, management wanted the ability to correlate traffic information with key data, such as sales results, to gain better insight into customers' purchasing habits and to track shoppers-to-buyers conversion ratios. They wanted a "dashboard" that consolidated multiple data inputs into a real-time view of business operations to better manage store efficiencies and to competitive advantage.

## Clearer images, greater accuracy

The Limited's first attempt at automation was a thermal imaging system set up as a one-store pilot program. The system detected shoppers entering the store by sensing body heat. At night, raw data transmitted to the thermal imaging vendor's headquarters were converted to a traffic count and posted on a website the following day. But this system was limited by both time delays and questionable customer count accuracy.

Coville discovered a better solution at a trade show, where video and

data management software provider DIGIOP, Inc. was demonstrating its video-based retail counting system, counting passing trade show attendees in real time. The integrated system included DIGIOP software, powered by a purpose-built Dell computer, and a video camera. "The real-time images meant the traffic count could be independently verified by looking at the visual record. This capability excited us," said Coville.

An in-store comparison of the DIGIOP system to the thermal imaging system revealed a dramatic difference, said Coville. "There was a 30-person discrepancy between the two counts, and the video record proved that the DIGIOP system was accurate. We were sold."

Based on those results, The Limited implemented DIGIOP's video management system solution in all 220 of its stores.

The integrated system enables The Limited to capture and analyze in-store data to optimize the customer experience while minimiz-

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ing labor costs. Additionally, The Limited's employees are compensated partly on sales conversion rates—making traffic counting accuracy very important to all. The DIGIOP system has satisfied this requirement, delivering images with accuracy rates far superior to the thermal imaging system.

### A powerful, scalable solution

Today, video cameras are connected to a DIGIOP Digital Video Management System in each store to gather intelligence. The Limited uses up to six cameras per store—one positioned at the store entrance to count traffic, and the others aimed at the checkout area to help prevent theft and monitor checkout lines and customer wait times. A video capture board

converts the analog video signals to digital, enabling a number of highly useful analytics. For example, the digital video can be correlated with other data sources such as point-of-sale transactions,

*“It’s easy to add capabilities because the system is digital, PC-based, and simply ties into our back-office systems,”*

— Roger Coville, Chief Information Officer, The Limited

and the DIGIOP system can automatically classify objects (such as people) within the video.

Each DIGIOP system produces an in-store traffic count every 15 minutes, and transmits this data from

to a secure website for access and analysis by both store managers and corporate managers.

Of course, the DIGIOP system provides traditional surveillance benefits of increased security and risk management as well, and The Limited plans to add complex loss prevention tools in the future. Coville said, “Our checkout desk cameras can be used for loss prevention management. If cashdrawers open without corresponding sales, the system would alert us so that we could quickly check for shortages.”

The Limited can also link the system to third-party systems for employee time-and-attendance management. “It’s easy to add capabilities because the system is digital, PC-based, and simply ties



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into our back-office systems,” Coville said. “New capabilities are modular, so we can grow as we go. We are exploring additional capabilities to create ‘stores of the future.’”

The Limited has been impressed with the system’s clear and crisp video quality, which is important for surveillance purposes as well as capturing images accurately so that corresponding data are also reliable. And because the Digiop solution is completely scalable, The Limited can easily add more analog, IP and/or megapixel cameras to any given store without having to switch to a new hardware platform.

### Significant accuracy and operational improvements

In the retailer’s initial test of recognizing and counting customers, Coville noted that the DIGIOP video system measured 91 percent accuracy, versus the 64 percent accuracy of the thermal imaging system—a 42 percent improvement. These accuracy levels have been further confirmed in the full installation at all 220 stores, where The Limited is now scheduling staff and calculating sales conversion rates based on this intelligence.

The Limited has confirmed labor saving benefits as well. Labor is

the retail industry’s number-one cost and a huge profitability factor. DIGIOP’s video-based system has empowered The Limited to match staffing levels to customer levels accurately, helping each store optimize profitability.

Additionally, The Limited has seen an uptick in conversion rates of shoppers to buyers since installing the DIGIOP solution. Coville explained, “The traffic data comes back and is available immediately to our corporate office and to the stores. We aggregate that data with our sales information to provide conversion rates per store. We also integrate the data with point-of-sale data systems and generate conversion rates almost instantly. We have improved rates nationwide by a couple of percentage points—on that scale, two percent adds significantly to the bottom line.”

The system delivers business intelligence in real-time, enabling managers to quickly react to store performance. For example, a low conversion rate on a particular day might prompt increases in staffing levels, or training. Similarly, managers might see a midday traffic pattern related to nearby office workers shopping during lunch breaks, and assign extra staff.

### In summary, The Limited reports:

- Real-time surveillance capabilities
- Intelligent traffic count and analysis
- Improved customer experience because of optimal staffing levels
- Instant web access to current data for effective decision making
- Higher sales conversion rates
- Dramatic cost advantages relative to the previous thermal imaging system
- Future-readiness with a scalable system that enables easy addition of other video data and analytics capabilities, plus point-of-sale and time-and-attendance system integration

The DIGIOP video-enhanced retail intelligence solution has delivered countless benefits beyond traditional surveillance, empowering The Limited to manage operations with greater efficiency, improve profitability, and gain invaluable competitive advantage.

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