

## INTERACTIVE SESSION: ORGANIZATIONS

### DORFMAN PACIFIC ROLLS OUT A NEW WIRELESS WAREHOUSE

You may not have heard of Dorfman Pacific, but you've probably seen its hats on celebrities featured in *People* and *InStyle* magazines. Dorfman Pacific, based in Stockton, California, has been manufacturing and distributing headwear and handbags for over 85 years. The company's philosophy has been to keep up with fashion trends while offering quality products with strong customer service, on-time deliveries, and competitive prices.

Traditionally, Dorfman served the mom-and-pop sector of the retail market. The company's warehouse processes reflected this. Warehouse activities relied on paper-based processes and tacit knowledge of the facility and Dorfman Pacific's customers.

In the 1980s and 1990s, Dorfman Pacific started adding big-box stores like Wal-Mart and JC Penney to its roster of customers. Such stores quickly came to represent half of Dorfman's business. More significantly, the large retailers had a much greater appetite for thousands of different items and box types.

Serving retailers like Wal-Mart with a paper-based order-picking process in a 100,000-square-foot warehouse was stressful and an ineffective means of doing business. During seasonal peaks in demand, Dorfman had to hire extra workers and pay hefty overtime wages to satisfy the demand. The extra wages amounted to \$250,000 every year. The company's IT systems were spread out over various functional areas and did little to support a transparent inventory.

Dorfman eventually increased its warehouse space to 275,000 square feet, but the space alone was not enough to overcome flawed business processes. Top management at Dorfman realized that major changes were necessary if the company was going to expand its operations successfully. In 2001, CEO Douglass Highsmith committed to a complete overhaul of the technology in the warehouse. He wanted to eliminate the paper systems and replace them with wireless technology.

The traditional order-fulfillment process at Dorfman began with a warehouse worker, called a picker, receiving a paper pick ticket from a supervisor. The picker then drove a forklift to the area of the warehouse where he or she expected to find the bin that stored the product on the ticket. The worker manually picked boxes off of the shelf and then

brought them to a packing area to be boxed, labeled, and loaded onto a truck. The warehouse was really set up only for picking, which left the remaining order-fulfillment processes as afterthoughts.

Confusing the process were bins that were labeled manually, making them difficult to read, and boxes that sometimes held more than one product. Additionally, each picker had his or her own preferred path to performing picking duties. The inefficiencies of these practices were magnified by special orders. The company's ERP system offered little help because it did not integrate well with other systems. Mark Dulle, Dorfman's IT Services Director, recognized that picking by order wasn't going to work in an era of expansion.

Dorfman approached the change as a business project rather than an IT project. A cross-functional team consisting of an outside consultant as project manager and managers from distribution, purchasing, customer service, and sales worked on the transformation. The IT department took responsibility for choosing hardware, installing the hardware and software for the wireless warehouse, and appointing an administrator for the new warehouse management system.

Highsmith's goals were to reduce labor costs and create the most efficient way for a streamlined warehouse staff to pick products with the smallest error rate. A successful implementation required a number of steps. First, the project team sought to learn everything it could about how Dorfman's 25,000 products were received, replenished, picked, packed, and shipped. This study included measuring the dimension and weight of each product, as well as the size of every bin and storage shelf, and determining whether products were stored in the correct places.

Next, Dorfman brought in Texas Bar Code Systems to test the feasibility of a wireless system in the warehouse. The project would have been fruitless if wireless signals did not function properly amidst the warehouse's concrete walls, steel doors, and metal storage shelves. The testing also helped to determine where the best wireless access points were located. Dorfman's warehouse required an unusually high number of access points, fifteen, because the floor space expansions over the years created an irregular layout, which was dense with inventory.



Dulle led the effort to revamp Dorfman's IT infrastructure, including replacing all of the old networking cables and switches with the most advanced networking technology available. He also reconfigured the ERP system and installed a new warehouse management system from HighJump Software complete with wireless capabilities and the ability to sort through warehouse and shipping data. To this system, which was based on a wireless LAN, Dulle added bar-coding equipment from Zebra Technologies, integration software, durable mobile computers, and additional computers mounted on forklifts.

With these components in place, paper was no longer necessary. The new ERP system and the warehouse management system used software to manage the picking, packing, and shipping processes. Pickers carrying mobile devices receive data telling them where to go, what to pick, and where to bring the merchandise using the most efficient route.

Dorfman employees had to change the way they worked. The new warehouse management system required a different warehouse floor configuration as

well as new ways to pick, pack, and ship products. Dorfman took the job of selling the new systems to its workers very seriously, convincing them that the wireless warehouse would improve their lives and their job performance.

Once the new warehouse system was deployed, pickers armed with wireless scanning devices could be assured that the bar-code-labeled bins to which they were directed contained only one product type each. Tracking inventory became seamless. According to Dulle, Dorfman can now handle twice the number of orders during peak seasons, and labor costs are down almost 30 percent. Eliminating the need for temporary workers and overtime has saved the company \$250,000 and counting.

*Sources:* Thomas Wailgum, "How to Take Your Warehouse Wireless," and "Wireless—Five Steps to a Successful Wireless Rollout," *CIO Magazine*, February 1, 2007; Jim Fulcher, "Rise of User-Friendly Devices Propels Strategic Use of Wireless Technology," *Manufacturing Business Technology*, February 18, 2007; Lisa M. Kempfer, "Hats Off to Wireless," *Material Handling Management*, January 2007; and "Hats-Off: Dorfman Pacific Implements Symbol Enterprise Mobility Solution for Paperless Warehouse Operations," [www.symbol.com](http://www.symbol.com), September 13, 2006.

## CASE STUDY QUESTIONS

1. Compare Dorfman Pacific's old and new order-picking processes. Diagram the processes.
2. What role did end users play in developing Dorfman's wireless warehouse system? What would have happened to the project if users hadn't been so involved? Explain your answer.
3. What types of system-building methods and tools did Dorfman use for building its wireless warehouse system?
4. How did the new system change the way Dorfman ran its business?
5. What problems did the new system solve? Was it successful?

## MIS IN ACTION

Use your Web-searching capabilities to answer the following questions:

1. What are some of the components of a wireless warehouse system?
2. What companies manufacture these components?
3. What other businesses or organizations have implemented wireless warehouses?
4. If you were implementing a wireless warehouse, what potential problems would worry you most?

The systems development team works with users to devise a systematic test plan. The **test plan** includes all of the preparations for the series of tests we have just described.

Figure 13-4 shows an example of a test plan. The general condition being tested is a record change. The documentation consists of a series of test-plan screens maintained on a database (perhaps a PC database) that is ideally suited to this kind of application.