



Bear Creek Corp. is one of the largest direct mail marketers in the United States, with \$500 million in annual sales. Located in Medford, Oregon, the company operates several mail-order catalogue companies that specialize in fresh fruit, bakery items, flowers and small gifts, processing millions of orders each year and delivering worldwide.

To accommodate its ever-expanding business, Bear Creek added a new distribution center of over 275,000 square feet to its existing sprawling facility. The site comprises 50 acres, including multiple manufacturing and warehouse facilities. The components of each order move several times between various locations during the assembly process, including the orchard itself, production lines and warehouses. Facilities include several refrigeration and freezer areas.

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 – Ric Sharp, director of engineering at Bear Creek

## The Challenge

Bear Creek Corporation required an RF system with real-time inventory tracking to replace its paper-based order fulfillment process. The paper-based system required a large workforce to maintain it, and lost paper, data interpretation problems, and data entry errors were always a risk.

There were a number of challenges facing Bear Creek in implementing an RF system across its facility. The system needed to have wireless coverage across a 50-acre campus; however, the Bear Creek environment made it extremely difficult to ensure an RF device lock in on an antenna. Some obstacles that faced any solution included thick concrete buildings and heavily insulated refrigerator and freezer facilities, the walls of metal warehouses created a reflection problem, and RF coverage was required outdoors on loading docks and in the field. Furthermore, the type of required hardware posed its challenges since the

environment and applications at the Bear Creek facility meant that hardware had to be able to withstand outdoor, cold storage, and freezer conditions as well as movement from one to the other.

Although the obstacles were numerous, the Network Services team from Psion Teklogix implemented an RF system that addressed all requirements including redundancy, throughput, security and reliability.

## The Solution

To address the many challenges facing Bear Creek Corporation, Psion Teklogix installed RF-enabled handheld devices throughout the site. These handhelds communicate over a wireless LAN (WLAN) to the central Warehouse Management System (WMS), which interfaces with Bear Creek’s purchasing, manufacturing, and order-entry systems. The system provides seamless wireless coverage over 50 acres outdoors, and across 500,000 square feet

of warehouse space.

Narrowband technology was used to provide the necessary signal strength to cover such a large area with a minimum number of access points, and to penetrate the thick concrete walls and insulation. To address the reflection problem in metal warehouses, Psion Teklogix placed antennas toward the center of the warehouse and incorporated antenna diversity to allow RF terminals to determine which antenna has the best signal.

Psion Teklogix’ handheld and vehicle mount freezer terminals are built to withstand extreme temperatures and accompanying condensing conditions. They are also rugged enough to function problem-free in the outdoors, tolerating elements such as rain, snow, dust and debris. Therefore, Bear Creek workers need not to worry about the performance of their terminals being affected by the varying outdoor, cold storage, and freezer conditions.

The system implemented by Psion Teklogix provides Bear Creek with real-time inventory tracking. Now, an order can be taken over the phone or on the website and picking-information is immediately sent to a warehouse worker on their handheld or vehicle mount terminal. The worker can then scan the barcode of the product and the location for each item, and the system verifies that the correct product is being picked and ensures the order is shipped quickly and accurately.

## The Benefits

The Psion Teklogix RF solution has created a multitude of benefits and has Bear Creek looking to Psion Teklogix again for an installation at their Ohio site in the near future. "We are hoping to duplicate the success in Oregon at our Ohio site," said Vic Reinheld, VP of Stores Distribution at Bear Creek.

The system eliminated the need for extra

data-entry staff since they are no longer required to input manual records. An increase in productivity and efficiency has resulted from having real-time data communication, which has also created the benefit of having employees respond to problems as soon as they occur. Furthermore, inventory accuracy has increased from just over 90% to 99.5%, which in turn has enabled resource planners to respond proactively to stock shortages.

The new wireless system has resulted in many cost-savings for Bear Creek. The standardization of operations has made Bear Creek more efficient, and when coupled with the user-friendly Psion Teklogix terminals, training costs have been significantly reduced. A new employee can now be running a forklift equipped with Psion Teklogix equipment within a week. This is particularly valuable for a company with extreme seasonal peaks and valleys. Automation has created cost savings in the form of reduced labor, time, and er-

rors. Materials management costs relative to units manufactured improved by 10%. Timely and error-free fulfillment keeps customers happy too.

The new system has also created qualitative benefits for Bear Creek in the form of customer and employee satisfaction. Customers are more satisfied with the service provided by Bear Creek because they receive timely and error-free order fulfillment, and employees are more satisfied with their work because they are now better equipped to perform their jobs more easily.

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