Supply Chain

Return to Applications

Warehouse Management

Return to Applications

For large convenience store or supermarket chains, the management of product storage, shipping, ordering and receiving would be extremely time-and-labor consuming were it to be implemented by handwritten recording using manual processes. However, advances in bar-coding, communications and database technologies are helping the grocery industry to optimize their stock management and distribution networks with great accuracy and real-time efficiency, thereby cutting associated costs and labor and increasing their competitiveness.

For example, in the past, many employees at convenience stores spent a lot of time and labor in receiving, checking and recording newly arrived stock during certain period of time in each working day. Similar labor was expended at the warehouse side when the ordered goods were moved from storage for shipping; warehouse workers have to check orders and move the right items to the right places.

Nowadays, most retailing giants have successfully deployed warehouse and distribution system which utilizes automatic identification and data capture technology, such as barcode scanners, wireless LANs and radio-frequency identification (RFID) to efficiently monitor the flow of stock, and thereby eliminate much of the inefficiency and inaccuracy resulting from manual processes.

In such applications, employees at warehouses use a barcode scanner to read the barcodes on grocery items which are being moved from storage, and then distributed via an automatic conveyor system according to a compiled shipping list, and forwarded to designated vehicles for transport to a temporary storage locations or retail stores. The scanned data is immediately transmitted to a computer at the warehouse, which is linked to the central database at a back office that monitors how the goods are sent to temporary storage locations or to end retail stores.

At the receiving end, retail store employees use their barcode scanners to acknowledge the arrival of newly arrived items and check for consistency. The read data will be immediately stored in the inventory database of the retail store, which is also linked to the central database at the headquarters. Additionally, today's industrial computer technologies are powerful enough to handle multiple tasks other than just management of goods. A good IPC with rich I/O and robust cpu performance can support additional functionalities, such as electronic shelf labels (ESLs), digital signage displays and video surveillance in the retail locations, allowing for great flexibility and scalability of application development and maximizing benefits of the system.

Source: Adlink: Warehouse Management

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