
BAR CODING:

DOES IT MAKE SENSE FOR MY OPERATIONS?

Bar codes have been around for more than a decade, but recently more and more managers have been looking closely at them to see if they can make cost effective use of this technology. The potential gains are tempting: near perfect accuracy: data entry speed that far surpasses even the fastest typist; and reduced labor costs because sometimes no worker intervention is required at all.

There are some drawbacks however, and many factors to be considered before implementing a bar coding scheme into an existing operation. The myriad of options in types of codes, printers and labels, readers and software can be daunting. In addition to hardware decisions, appropriate applications for bar coding must be identified. In order to justify the time required to apply labels to a given set of products, the product must need scanning more than once or accuracy must be an over-riding concern. Without careful planning one could spend more time applying labels than the scanning systems could save reading them.

BAR CODING APPLICATIONS

Before any of the equipment can

be specified, appropriate applications must be determined, and an implementation plan must be made. One method of approaching this problem is to break the system into small steps, instead of facing massive disruption of the entire organization.

If something goes wrong, each part will be manageable. Reliable back-up techniques must be available.

...the potential gains are tempting: near perfect accuracy, data entry speed...no worker intervention...

A good place to start bar coding is in the inventory location system. Updating the inventory location system for normal in and out transactions can be done easily with bar codes:

Each pallet to be put away gets a bar coded label detailing the product on the pallet, the quantity, and a lot number if necessary. Placing several such labels on the pallet makes it pos

sible to read the data, no matter which way the pallet is put away. Every location in the warehouse has a bar code label to identify it. When a fork lift operator stores a pallet the pallet label is scanned with a hand-held reader and then the location label is scanned. Later, the computer can be updated by downloading the information from the hand-held reader. Retrievals would work in the same way.

Once all the pallets and locations have been labeled, physical inventories can be taken easily, and cycle counting becomes practical.

For a picking operation where it is practical to mark each picking unit with a bar code, picking can be verified using bar codes:

The orders are downloaded to a hand-held bar code scanner. Each item is displayed on the scanner's screen, the picker picks the specified number of items off the shelf and scans the bar code before the item is put into a tote. When the correct number of units have been picked, the scanner displays the next item to pick. Picking and checking are thus accomplished simultaneously.

"zero suppressed" version). UPC codes provide only a 5 digit vendor number and a 7 digit SKU number.

CODE 3 OF 9: This code has widespread use in government (GSA and Department of Defense), as well as general industry applications. It can contain both numbers and alpha characters. (Sometimes called Code 39.)

CODE 128: This code has been developed more recently than UPC and Code 3 of 9. It can encode any ASCII character. It is especially well suited to use in general data entry because scanned data can include anything that can be typed at a standard computer terminal.

INTERLEAVED 2 OF 5: This code is the standard for shipping containers. It can contain only numbers and the codes must be of a uniform length.

There are many other codes to choose from. The requirements for your specific application help to narrow the choices. For example, if you must be able to include alpha characters in your bar codes you can ignore UPC and Interleaved 2 of 5. If your industry uses a standard for bar codes, then you would want to comply with that standard, if possible.

HARDWARE CONSIDERATIONS

Bar codes can be printed by an outside service or printed in-house. Commercially produced labels are available on a variety of different media and are usually of high quality. Labels printed on foil tapes can be extremely durable, able to withstand years of repeated reading

...printing your own labels gives your operation greater flexibility and can save money...

Pre-printed labels typically have very high resolution so the bar code can be much smaller. They are a good choice for labeling items that are durable and will be scanned many times, such as pallet rack locations.

Printing your own labels gives your operation greater flexibility and can save money by reducing the need to maintain an inventory of pre-printed labels. Since most inexpensive printers have lower resolutions than those available to commercial printers, the labels produced in-house need to be larger and tend to be less durable.

Many types of printers are available - from dot-matrix printers, which tend to be inexpensive, to laser printers, whose output is nearly as good as commercially printed labels and fast thermal printers, as well as many others. Which one you choose depends upon your needs for speed, readability, and price.

This is also a wide assortment of scanners to choose from. Some read products as they pass by on a conveyor. Some are hand-held guns or wands. Others hook directly to PCs or mainframes, and still others are battery powered and only download their data at the end of a shift. For many warehouse applications the battery powered hand-held units offer the greatest flexibility. Many users need more than one type of scanner to suit the differing requirements of each warehouse function.

Paying careful attention to the selection of equipment, and giving some thought to the possible uses of bar codes in the warehouse can improve almost any operation greatly. Failing to do those two things can cause a tremendous amount of frustration as well as wasted time and money.