Bar Coding: The Road to Making It Work

Texas distributor Bill White chronicles his company's bumpy journey to bar-coding profitability. In a sidebar, the Petroleum Equipment Institute assesses the advantages of bar coding for the industry.

A service solution

To achieve significant profitability, a simple, yet difficult, question must be answered: "How do we, as distributors, accurately have on hand the products that our customers need at the best competitive price?" That is both the question and the dilemma. To survive today and to make a profit, distributors need to handle a greater volume of transactions with increased speed and accuracy.

Often times, a profit can only be realized through controlling the cost of handling. The typical 80/20 rule of inventory predicts that you will spend 80 percent of your time to maintain an inventory that produces only 20 percent of your sales. Therefore, to increase the profitability of your operations, you need to decrease the amount of time and cost spent in managing this inventory. Controlling loss, breakage and availability are the major components that a distributor must juggle to reduce the operating costs of handling inventory.

This article describes how we at White's Pump Service & Supply, Inc., have aimed to translate these financial realities into a specific bar-coding program.

Limited resources

White's Pump Service & Supply, Inc., has limited resources, both in terms of people and capital. We have neither the time nor the money to spend 80 percent of our resources on inventory control. Our challenge, therefore, has been to find a way to effectively manage our inventory with existing staff and resources.

First, in 1994, we looked at our resources. They included two full-time materials-handling employees and in-house computer-generated labels to identify our incoming parts, materials and products. We also had already assigned product codes to all of our inventory.

Then, we looked at the challenges. We had been using a method to check out inventory to service technicians (for service jobs) that added to the cost of our handling or mishandling. At that time, our service technicians checked out everything they thought they would need for their service jobs for the day. At the end of the day, or the following day, the technicians returned unused products to our main

warehouse.

Some products were sometimes transferred to the technicians' truck stock (still another "warehouse" for inventory control). Although this process yielded a greater availability of products to the main warehouse because unused parts were available for other jobs, it also led to more potential and actual errors in handling. This method also slowed the completion of other work by the main warehouse employees because they spent additional time checking in the same parts that they had scanned previously.

This problem was costing us a significant amount of money. My son, Toby, and a former associate approached me about looking into bar coding as a solution, and I agreed to try it. Initially, we were encouraged by the examples of the local grocery and other retail stores, which made bar-code reading appear simple and fast. Accuracy was not a problem to the clerks, and the training of people on scanning and handling appeared easy enough. It seemed to us that all we needed was a system that would do what the retail merchants were already doing. Our search started right there—at the retail area.

Although we had problems before, embarking on a journey we knew nothing about turned into an even greater challenge!

The Worthington laser scanner with the Worthington handheld computer, joined with velcro, allows for portable, one-handed operation during scanning.

Trading pencils for pistols

Our first bar-code program, named RegisterMate, was designed for department stores. This was one reason we purchased it; department store bar-coding operations seemed to run so smoothly. Our first label even had the price printed on it—a feature we had to eliminate. Although RegisterMate was more suitable for department stores than distributorships, it was our first vehicle on the road to bar-coding success. (More on that later.)

After reducing our inventory numbering length from 25 to 16 alphanumeric characters—RegisterMate did not allow the full-length entries—we began our search for a bar-code scanner. The pencil (wand) scanner was both our first choice and our first real mistake. Irregular surfaces, such as we had at the warehouse, do not read well with a pencil reader. Within the first two days we traded the pencil wand for a pistol grip laser scanner. This was our first real success. Labels could be read from a foot away and with excellent speed and accuracy.

Then came the matter of printing the labels. We started with a dot matrix printer to print bar-code labels, but have since switched to a thermal printer. Using Code 128 (a bar-code symbology), we had bar codes of sufficient size to ensure that the dot matrix printer worked for us for about twelve months before it needed to be replaced with another dot matrix printer. We replaced four dot matrix printers before we finally changed to a thermal printer.

We stuck with the dot matrix printer so long because of its low cost. The dot matrix printers sell for less than $300 each, while the thermal printer run around $1,500. With the addition of the thermal printer, our labels became much crisper and more readable. The thermal printer is also much faster and quieter.

Over the last five years, our method of labeling inventory items has changed only by adding the bar code at the top of the label. We still label each item as it is received into inventory. This method could be changed if our vendors would implement bar coding at the point of origin; but I guess that is the chicken and egg story—which comes first? (Read the sidebar below on Petroleum Equipment Institute's bar-coding initiative.)

After about four years of trying to modify RegisterMate to fit our needs, we decided to replace it because we could not integrate this system into our accounting software. But, the question was "With what?"

Our local programmer modified our existing accounting software to implement a feature for tying bar-code printing and reading into our tried and proven inventory program. This change took a lot of patience explaining how we wanted the bar coding to work in our present account scheme but, surprisingly, not a lot of time because the programmer accomplished our initial objective in about six hours.

We welcomed the change from RegisterMate; but since our second bar-coding approach was a "patch" program, it caused some processing delays with running transactions and was still not our ultimate solution.

For White's company, the Stripe® Series thermal printer produced clearly readable bar-code labels more quickly, quietly and with greater longevity **than the dot matrix printers. Photo courtesy of Zebra Technologies Corp.**

Handheld computers with scanners

Besides the problems involved in the multiple handling of in-house inventory, we have also had a hard time getting accurate physical counts. Twice a year, we set aside a weekend to "pick and count" some 3,000-plus line items of inventory. In days gone by, the accuracy seemed to decrease as the time spent on the job increased. These inventory days have been memorable—much like a migraine headache that refuses to go away.

However, our new method of scanning with a handheld computer (HHC) and scanner has cut the counting time to a fraction. We purchased the handheld computer to have more flexibility in the warehouse, in that the HHC allows checkouts at other places besides the computer keyboard. The Worthington HHC, manufactured in Santa Cruz, California, has been a wise and proven choice for us. The HHC can be portable with the scanner or connected by a "y" cable directly to the keyboard.

The HHC contains our entire physical count when we do a "pick and count." Since the HHC has three different programs—receive in, checkout or transfer—we can interrupt a count to do a checkout and

then return to a count if necessary.

The HHC expedites the pulling of products for large installation jobs. Ordinarily, it is quite a lengthy and time-consuming process to check out of all the materials to document the in-process products. The time spent using the HHC is less than 20 percent of the time it takes to "write it down." The HHC also speeds the return to inventory of unused products once the job is complete.

Another advantage of the Worthington scanner is that it never reads an inventory item as another item. The scanner may sometimes not read the label due to the quality or position of the label, but, I repeat, it never tells you that an item is other than what it is labeled. (I could not even venture a guess as to how many times I myself have transposed a number or read a number as another number.)

A typical bar-code label is used to identify an inventoried product.

The benefits of bar coding

In our respective inventories (other PEI distributors), we are all very individual in our identification of the same things. For example, product numbers might differ signicantly for a Gilbarco Pump Access Module:

Gilbarco =
PA02410010001 Pump Access Module

White Pump Service & Supply, Inc. =
GIL-PA02410010001 PAM

Another Distributor =
GIL241PAM

Universal Product Code (U.P.C.)* =
012345678905
(012345 could represent all of Gilbarco; 67890, a Gilbarco part number; and the number 5, a check digit)

*See "Bar Coding: The Road to Making It Work".

However, all distributors or other handlers could uniformly identify the same product by use of the same U.P.C. number. Uniform standards for bar coding were invented long ago, but our industry has not fully adopted them. Today, we need a uniform understanding so we can take full advantage of the benefits of bar coding.

Bar coding your entire inventory may sound like a mountainous job, but it is not necessarily so—especially after the job is completed and you are reaping the benefits. Our thermal printer prints

100 labels a minute. At a cost of $140, a roll of continuous 3H inch x 1 inch labels contains 5,500 labels. If you have 10 items of each of 3,000 line items, you will need 30,000 labels. This cost equates to $0.025 each, plus labor.

We found it is best to label all new incoming items as they are received and make additional labels for any of the same items that may still be in stock. This way, the 20 percent of your inventory that is moving the fastest is labeled first as soon as it is replaced. Then we label existing inventory as we have time.

We dedicated a PC computer for the use of bar coding and inventory control at the beginning of this project. We are presently still using this PC, but also have purchased a new client/server system. We are converting our entire business system to the client/server system, using a customized program by Vertical Market Software.

The new system will be on-line with all individual workstations and integrated with all of our accounting. By bringing this inventory area into the active part of our completely integrated business system, we can retire the separate inventory and bar-coding computer. This incorporation should speed our handling, decrease our duplicate inputs and increase our accuracy in reporting. Sorted reporting capabilities should be multiplied with our new system.

Why bar code?

Eventually our entire industry will be doing bar coding—hopefully sooner than later. Elimination of errors and increased speed in handling will benefit both manufac- turers and distributors. This reduces costs, which translates into decreased prices. Many areas of business can be expanded, such as vendor-managed inventory and electronic data integration, as soon as bar coding is implemented.

Bar coding can be either a problem or solution, depending on how you handle it. Here are some tips to help you make it a solution:

  • Choose someone in your company, or hire someone, who will be totally sold on the idea of implementing a bar-code system in your company.

  • Get the educational materials about bar coding for your bar-coding coordinator. Two very good sources are: The Barcode Implementation Guide— Using Barcodes in Distribution, by Stephen L. Pearce and Rick Bushnell (Published by Quad II Inc.; 1997 215-822-9775; www.ISIT.com) and Compliance Labeling—How To Do It, by Scott C. Cardais (Published by Quad II Inc.; 1995).

  • Have your designated person attend an educational seminar on bar coding. Seek out a technology partner to assist in implementation, specifically a consultant who deals with programming and bar coding—a step our company left out and that, consequently, cost us some time.

  • Give employees the capital commitment to make purchases for the elementary requirements. These purchases would include such items as a thermal printer, laser scanner, handheld computer and label supplies.

• Be open to changing some of your present procedures in order to make time-saving changes. Do not be negative—instead, support the impetus to succeed. Transfer any non-supportive personnel to other areas away from the implementation area.

• Encourage your trading partners (vendors) to start their own bar-coding programs so you are all benefiting from the program. Do not be afraid. PEI through the Manufacturers/Distributors Relations Committee is promoting the use and development of bar coding within our industry (see the sidebar on 16 and 17).

It is time that our industry joined the rest of the world in using bar coding to decrease handling time and to increase profitability.

My thanks goes to Toby White, who, in our company, possessed the traits and goals to get us started on the right road to bar coding.

Bill White is the President of White's Pump Service & Supply, Inc., located in Lubbock, Texas. He was the 1997 President of the Petroleum Equipment Institute, and is a leader in developing effective bar-coding initiatives for the industry.