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# RAISING THE BAR

**The Benefits of Bar Coding for Jewelry Manufacturers**

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of bar codes can help manufacturers track inventory, control work flow, and ensure proper shipping.

**B**ar codes are everywhere, from cereal boxes to government documents, and more and more they're finding their way into jewelry manufacturing operations. Those blocks of black, vertical lines, standing at attention on a long row of numerals, can hold volumes of information—everything from order numbers to sales destinations. They can also change the way you do business.

There's no doubt that bar coding can increase the speed and accuracy of data entry and retrieval, improving production flow, inventory control, and shipping procedures. In many ways, bar coding systems may seem like the ultimate production tool: While you're sitting at your desk managing things, bar coding systems are working just as hard for your manufacturing operation.

"If you really want to stay on top of your business, bar coding systems are an easy, simple way to have another set of eyes minding the store for you," says Allan Dessner, president of Big Byte Solutions in Dobbs Ferry, New York.

However, bar coding may not be for everyone. Small manufacturers that sell only to other manufacturers may find the benefits don't outweigh the costs. On the other hand, they may find the improved inventory control offered by the system an invaluable asset. Ultimately, you have to ask yourself, "Will bar coding *really* help my business?"



STULLER

## BAR CODING BASICS

To answer that question, manufacturers must first know a little about the process. Basically, a bar coding system consists of five components: the bar code symbol (the lines and spaces of which contain the information about an item), a printer, the label on which the symbol is printed, a scanner to read the labels, and a computer system to generate, record, and track the bar codes and integrate the system. Labels can be read through either a laser scanner or a charge coupled device (CCD), which uses the same type of sensor as that found in a video camera.

What this adds up to is a highly intelligent system that can make a manufacturer's life easier in several ways. Primary among its applications, a bar coding system can help track inventory easily and efficiently.

"The single-function, generic software packages for inventory work very well for many companies," says Norman Katz, president of Katzscan Inc. in Dania, Florida. "In the jewelry industry, where several different items look very much alike, bar codes can be critical for their correct identification." A bar code can signify style or serial number, as well as track the order number, the line number within the order, and, if necessary, the bag number within the line.

Also, by coding every bin and shelf, you'll save time during physical inventory. "You could do inventory more often, since it doesn't take as long—or you could do it less often, if you're finding you're more accurate," says Ted Gardner, national account manager for jewelry at Computer Associates Inc. in Smithfield, Rhode Island. And because a bar coding system provides a very accurate count, manufacturers can better ensure they have the appropriate insurance for their inventory.

Bar coding systems can also track work flow. As jewelry pieces move through the manufacturing process, a bar coding system can follow the flow and identify exactly where an item is located. The code from a production bag can be scanned, and the system will automatically enter the bag's job number, work location, date and time of entry and departure, and person or department it's going to.

"Bar coding has become a very effective quality control mechanism, in that defective merchandise can be quickly traced back to the source," says Katz. "You can then bill the supplier for these items and drop repeat offenders from your authorized vendor list."

Personnel problems such as low productivity and theft can also be tracked and identified. "A bar coding system can tell you how fast your employees are working, by way of the number of pieces

Printers are one of the vital components of a bar coding system. Calibrate your printers periodically to ensure the bar coding symbols can be scanned easily.

going through their hands," Dessner says. And if anything disappears as it passes through those hands, your bar coding system will know it, right down to when and where those pieces were last seen.

"Materials management is a very important reason for using a bar coding system," says John Winters, president of Computer Associates Inc. in Smithfield, Rhode Island. "It's very difficult for an employee to steal something if you have a system that accounts for every item, including its weight."

Because bar coding systems are designed to be configured by the user, manufacturers can develop their own tracking systems. For example, Stuller Settings in Lafayette, Louisiana, uses bar codes to track an item's identification number (SKU) and its weight of material to arrive at an accurate price for customers. Bar coding also allows Stuller to track the number of batches and pieces within each batch as they go through the production process. "If we notice a defect along the way, we remove the piece from the batch and the bar coding system tells us the number of pieces remaining," says Chick Leach, Stuller's vice president of inventory.

Once a piece is made, of course, you'll want to be sure it's shipped correctly. Bar codes can help here, too. At Stuller, says Leach, "we scan the order bar code back into our computer system, which prints both the invoice and the shipping label at the same time. This way, we can guarantee our customers consistency of delivery and accuracy of order content."

Even salesman's lines and product taken to trade shows can be tracked by bar code. "When [a line] goes out, you scan it and build a file," says Peter Gollon, president of Kasoy Automated Solutions, the bar coding division of Kasoy in Hicksville, New York. "When it comes back, you scan again and compare the two files."

While checking inventory in and out is standard practice, using bar coding can drastically reduce the time involved. Without bar coding, Gollon says, "accounting for what was taken out and what came back can be a major half-day project. With bar coding, you can save hours on both of these transactions."

## BEFORE YOU BUY...

Obviously, a bar coding system can accomplish some fairly amazing things. But the question remains: Do you really need one for your jewelry manufacturing or retail business? Before you run out and buy, ask yourself a few questions:

- *What does my current paper-driven system cost?* Figure out how much you spend currently on inventory, work flow tracking, and other functions that bar coding can accommodate. Compare that to the cost of a bar coding system before you install it. You can expect to spend between \$3,000 and \$25,000 to outfit your company.

- *Do I already have a compatible software system?* You'll need to find out how and if the new system interfaces with your current office software. "Decide what kind of interface must exist, if any. You need both systems to communicate together," says Katz. "A lot of companies forget this." He adds that while there is some bar coding software for Mac systems, "the vast majority of hardware and software is for the PC market."

- *Can bar coding save me time?* Whatever your production vol-

time, whether you're doing three bags a day or 100, "if you're spending too much time chasing after information, then you need a bar coding system," says Dessner.

- *Do I need it for tracking inventory?* If you move products often, a bar coding system can keep track of items transferred from one location to another—for instance, from the safe to the salesperson's bag and back to the safe again.

- *Does my company's growth warrant it?* Perhaps your business has grown so much, or is continuing to expand so quickly, that you can't meet your quotas on time. A bar coding system could help.

- *Am I seeing mistakes in data entry?* Human fingers make mistakes at the keyboard, something a bar coding system could eliminate. According to Katz, "Statistics show that even a skilled professional data entry person makes one error for every 350 characters typed. The accuracy rate for a bar code scanner is typically only one incorrect character in every 3.5 million."

- *Is data entry too slow?* If your current system is cumbersome and slow, you're causing customer delays and costing your business money. "It's wasteful for staff to spend too long at one task when they could be doing something more productive," says Katz.

- *Do my customers require bar codes?* More and more major trading partners do business only with jewelry manufacturers that comply with a bar coding system. "If you're targeting the mass merchants, you'll probably need a bar coding system to get their business, or you may not be doing business with them at all," Gardner says. "Most larger retailers, such as JCPenney, Federated Department Stores, and Nordstrom, require UPC codes on all merchandise." Even if this is the only question you've answered with a yes, you need a bar coding system.

## YOU'D BETTER SHOP AROUND

Say you decide that you need bar coding; how do you know which system to go with? First you must select a scanning system that best suits your needs. Basically, you have three standard versions from which to choose:

- Hand-held, portable units. These come in two types. With one, after a group of bar codes is scanned, you download the information by plugging the scanner into the appropriate receptacle in the computer. The other type, a radio frequency scanner, immediately transmits information back to the computer for validation and/or further processing (pricing, tallying, etc.).

- Peripheral scanners, which include wands or hand-held guns attached to the

computer; information is downloaded directly from the scanner to the system. The wand, which requires physical contact with the bar code, is increasingly being replaced by the more accurate and faster laser gun, which can read a target (even if it's moving) from several feet away.

- Real-time capture units with a stationary scanner directly attached to a computer. There's no scanner to hold or move. You simply position the bar code—whether by holding the item or by placing it on a conveyor belt—so it can be properly scanned. These are the most common systems used.

When you shop around, it pays to thoroughly investigate any company from which you might purchase a bar coding system. Be prepared with the following list of questions:

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- Can the company show you a variety of bar coding systems?
- Will the company take the time to analyze your current operating procedures before recommending a system?
- Does the company represent a complete line of bar coding system components, from labels to software?
- Will the company provide component upgrades in the event of technological advances, without disrupting your bar coding procedures?
- Does the company provide training on its equipment?
- Does the company offer a fair and complete service maintenance agreement?
- Can the company demonstrate an already-working system that's close to meeting your needs?

When you (or the company you're buying from) can answer yes to every one of these questions, you've found the company to go with. Even then, once you've settled on a product, get in touch with another manufacturer who uses it. Arrange to see it in action, and then decide if that system could fit into your operation.

"You have to shop around, and I don't just mean shopping for price," says Gollon. "Whether you spend \$2,000 more or less won't make the difference in your overall success. What make the difference are the details of the system: Does it help your business?

Does it make your operation flow? Does it show you things you don't already know or can't see? Look for something that's right for your business now, but also has room for growth—adding more functions or more workstations."

## READY, SET, BAR CODE!

So you've decided that you need a bar coding system, and you've shopped around, and now you're ready to install one in your jewelry manufacturing or retail operation. Before you sign the check on a new system, be sure your company is ready.

Let your staff know ahead of time that you're bringing in a bar coding system, and explain how it will benefit them and the company. You want to prepare them for the changes and increase their amenability to training. "Also, because a bar coding system monitors all movement of work order and/or production staff, assure them you won't be spying on them," suggests Dessner.

You also might want to hire a bar coding system consultant, a neutral third party who knows the jewelry manufacturing industry. The right consultant can help you select the best bar coding system for your operation—you don't want to order 10 scanners when you need only three. A consultant can also help you revamp your business procedures to accommodate your new system. "Determine your requirements so you don't under- or over-buy," suggests Gardner.

You must also determine how you'll use the system. "Think about where bar codes will help your business—in finished and loose goods inventory control, production tracking control,

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and/or memo and sales order fulfillment," says Dessner. Where can you reduce non-value-added time and increase accuracy? How much information do you want to track? How will your customers benefit from your having a bar coding system? Look for a software package that suits your needs.

There are two basic software approaches. Some programs process each individual bar code immediately, at the same time updating all existing data. Other software programs collect scanned bar codes by the batch and process them as a group. The former detects errors right away, so you can correct them without delay; the latter requires that you wait until the end of the process before making any corrections, and then reprocesses the errors as a group. Another difference is cost.

"The decision between real-time and batch processing depends on the business need, the data to be scanned, and your budget," says Katz. "Real-time scanning, which requires radio frequency, can add a significant cost that may not be justifiable."

As for labels and scanners, the physical work environment can help determine which types you'll need. For example, a hand-held scanner more conveniently reads stacked boxes of product, and a moisture-proof label better serves items lined up for an ultrasonic bath.

You must also consider location of the equipment. Having equipment at every work center is "too costly, and usually not necessary," according to Winters. If you have a wagon-wheel-style work flow pattern, he says, in which items are tracked from one work center into the next through a central hub, you can place a stationary scanner at the hub. You can also use a portable bar cod-



Scanners come in three basic types: Hand-held portable units, peripheral scanners (including wands and guns) that are connected to a computer, and stationary units.

ing system, he adds. Wherever you place the system, keep it away from grease, oil, and dust.

For a smooth transition, make sure your current system is well organized. "You should already have a good handle on the information flow from one place to another, with no redundancy," says Samuel Katzovicz, senior principal engineer with Crompton Systems Corp. in Pawtucket, Rhode Island. "When you introduce a bar coding system, you replace only part of your current system. Therefore, your current system should be organized with a bar

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coding system in mind, because you want to be able to adapt it to the new one."

Katzovitz also advises that there should be "complete compatibility between the company that generates the bar code and the one that receives it, so that the latter can read and interpret the other's codes."

In with the new can mean out with the old. "This may be a good time to scrap some old item numbers and introduce new ones, or lay out your warehouse better and label various sections so you can inventory items by location," says Katz. Make operational changes as you see fit to accommodate the new system.

You may also want to update your existing printer. If it doesn't print clearly and precisely, the scanner won't pick up the width of the bar code's lines and the spaces between.

## PLUG YOURSELF IN

The right bar coding system, once it's installed, requires proper care and feeding. A few simple tasks will keep things running smoothly.

First, train your staff. It may take weeks or months of analyzing your current operations and shopping for the best bar coding system supplier before you have a system in place, but it takes merely a few hours to train your staff how to use it. Have the bar coding software company come in and teach them how to operate the scanners and access and retrieve computer data.

"If you use more than one bar code in a single operation, such as when moving stock on the manufacturing floor, then you'll want to train your staff to scan in the proper sequence—from order number to the number of pieces completed, for example," says Bob Young, manufacturing manager for General Findings (a division of Leach & Garner) in North Attleboro, Massachusetts.

Also be aware that as your printer ages, the bar code registration may shift, making the symbols unreadable. "[You should] periodically recalibrate your printers and read your own bar codes," suggests Katzovitz. Verifying the integrity of your bar codes will ensure continued, accurate scans.

This becomes doubly important if you're using bar coding to comply with a large retailer, says Gollon. "Check the accuracy and readability of what you're

printing. If it doesn't scan easily at your shop, it's not going to scan easily at the register, and you're going to hear about it."

Most of all, expect some changes. Once you install your bar coding system, you may end up modifying many of your current business procedures, such as work flow and reports, to accommodate it. Katz says that after you've used your new system for a while, "you may come to realize how much it can do for you, and wish to adjust your software accordingly. You may end up changing or adding new software to conform to expanded bar coding use in your company."

You'll definitely spend time and money searching for, installing, and upgrading your bar coding system. You may also find that every minute and cent is well spent.

Perhaps General Findings' success story sums it up best. "Several years ago, in an effort to improve efficiency, the company installed a bar-coded order-picking system to ensure correct items and quantities, and to streamline operations," Young says. Once the staff had generated a bar code for a particular package, they never had to input that information again. As the order traveled from packaging to shipping to invoicing, the person situated at each station along the way needed only to "swipe" the bar code with a scanner to capture all the information. The result? "Within three months, our return on investment was realized and indirect labor was cut by 47 percent and transferred to direct labor positions."

Stuller's Leach concurs that bar coding offers many advantages. "We would not be as efficient and effective for our customers if we couldn't bar code our SKUs and move them rapidly and accurately through the system," he says.

Indeed, your customers may be the ultimate motivating factor as to whether or not you install a bar coding system. As Gardner noted earlier, many large retailers and department stores are demanding that vendors comply with bar coding requirements.

"To attract and keep their business, you must begin to move toward compliance as soon as possible, or you won't survive in tomorrow's marketplace," says Katz. "Simply put, if you want to sell to the major retailers, you can't afford to be without a bar coding system." ♦