Streamline your Business Processes with Barcodes:

How automated indexing and workflow can enhance your bottom line

By Stephen Gray, Director of Quality Assurance, Optical Image Technology, Inc.

Regardless of the industry, organizations are constantly looking for cost-effective ways to increase productivity. In a competitive market, it is imperative that companies constantly strive to find innovative ways to do more with less. Nowhere is this more evident than in businesses with processes that are paper-intensive. These businesses often face challenges when it comes to categorizing and centralizing their information.

With an electronic document management system (EDMS), businesses no longer have to worry about long turnaround times, inefficient access to information, expensive storage costs, or misplaced folders or files. Email messages, faxes, photographs, papers, voice files, and other information can be stored and accessed immediately and securely in a centralized reservoir. A well-planned EDMS implementation results in better customer service, while also facilitating and improving corporate compliance measures.

> Barcode technology is a form of optical character recognition (OCR) that consists of machine-readable information that is used to store data. It is less expensive, more reliable, and easier to use than other forms of OCR. Barcodes have traditionally been formatted into a series of bars and spaces, although sizes, shapes, and types of barcodes have become more complex and specialized as the technology has evolved.

The most critical component to successful EDMS document retrieval is indexing. This often involves manual keying, which can be prone to error and extremely labor-intensive.

Unfortunately, it is often easier to deposit documentation in a filing cabinet than it is to manually key in meaningful indexes.

Fortunately, barcode technology can help organizations to simplify these processes with automated indexing. Barcodes are highly reliable and consistent, providing assurance that indexing is accurate. Barcodes can also designate which destination a document should have when it enters an automated workflow. Businesses employ barcodes for vastly different reasons, yet they usually experience similar results: better accuracy, less opportunity for error, and substantial savings in time and money.

Background

Barcode technology is a form of optical character recognition (OCR) that consists of machine-readable information that is used to store data. It is less expensive, more reliable, and easier to use than other forms of OCR. Barcodes have traditionally been formatted into a series of bars and spaces, although sizes, shapes, and types of barcodes have become more complex and specialized as the technology has evolved. Usually the accuracy rate for barcodes is much higher than that of other OCR, since barcodes are standardized. Other types of OCR can be hindered by type text that appears in different font sizes and styles.

The technology has come a long way since its inception in 1973, when it first emerged on a pack of Wrigley's gum. Barcode technology was initially developed as part of a partnership that was formed between manufacturers and supermarkets in an effort to improve inventory control and decrease costs through automation. The result was a Universal Product Code (UPC), which was so successful in automating the checkout process that it served to expand the barcode to different areas of business.

Barcode types and benefits

While UPCs are extremely visible to consumers, other types of barcodes are prevalent in the workforce to help organizations improve their business processes. Code 128 (also known as ISBT 128, UCC-128, and EAN-128) is used widely for shipping purposes; it uses the lower 128 ASCII characters, which gives it the ability to encode text, numbers, and functions.

Code 3 of 9, the most common barcode, is also known as Code 39 and LOGMARS. It is ideal for applications that require name badges, identification, tracking, healthcare product labeling, and inventory. Like Code 128, Code 39 also supports the lower 128 ASCII characters. Each character is composed of six narrow and three wide bars, and contains four white bars and five black.

Code 2 of 5 (also known as 2/5) is used primarily in the warehousing and distribution industries, as well as for sorting and airline ticketing. It uses fixed space widths, and encodes paired numeric information within its bar widths. A denser version of Code 2/5, known as Interleaved, encodes data in the bars and spaces of the barcode and can even be printed from an MS Windows program.

There are more than fifty different types of barcodes, with myriad uses in the business world. Barcodes provide a means of automated capture; as such they can be used to automatically populate information about customers from a database, mechanically index information about documents, eliminate data entry and its unavoidable errors, encode information pertaining to document retention or destruction, and much more. Implementation of barcode technology usually results in tremendous ROI across a number of different industries.

There are more than fifty different types of barcodes, with myriad uses in the business world. Barcodes provide a means of automated capture; as such they can be used to automatically populate information about customers from a database, mechanically index information about documents, eliminate data entry and its unavoidable errors, encode information pertaining to document retention or destruction, and much more. Implementation of barcode technology usually results in tremendous ROI across a number of different industries.

Uses within Healthcare

A famous 2004 study by HealthGrades, Inc. reported that medical errors were the sixth leading cause of death in the United States. The use of barcodes can significantly combat and reverse this trend; indeed, barcodes are now used in almost every realm of patient care. Their uses range from identification of patients, medications, medical devices, and procedures to completion and security of patient records. With unparalleled speed, ease of use, and accuracy, barcodes also help to facilitate HIPAA compliance by protecting patient privacy.

docu *DocFinity*®

The administration of pharmaceuticals can be automated using barcodes, which reduces or even eliminates the potential for distribution errors. Barcodes provide assurance that the proper dosages and brands are stocked on pharmacy shelves, and enable identity validation from the time that medications are ordered from wholesalers until they are stocked and distributed. A barcode ensures that the right dose of the right medication is dispensed to the right patient at the right time. At the same time, a barcode has the potential to initiate a workflow, the purpose of which is to update inventory.

Barcoding will be useful as healthcare facilities transition toward electronic medical records (EMRs). By removing the need for data entry, barcodes will increase speed and accuracy of indexing as patient information is scanned into healthcare record systems.

Barcodes are also indispensable outside of the clinical realm. If they are included as part of patient mailings, they could be used to initiate automated workflows when completed mailings are returned for processing. Mailings would be routed electronically to their respective destinations, and patient information could be entered and indexed automatically, without any need for manual intervention.

Uses within Insurance

When insurers transition from paper-based procedures to EDMS, they usually implement one of three strategies: They either completely convert their backfiles to electronic records, they scan and store records from the last three years through the present day, or they scan and store information from the present day forward. Barcodes provide an inexpensive and efficient way to scan information into a storage reservoir. They can be used on separator pages, to tell where a document starts and ends; they can be used to populate metadata from a database; and they can even be used to automatically indicate specific scanning instructions.

Barcode technology eliminates the most difficult part of the indexing/scanning process. It enables insurers to separate and sort folders, so that claim numbers, policy numbers, and document types can be properly identified and easily retrieved. Barcodes can even specify whether documents should be scanned in color or black and white, without the need for human intervention. Typically, some insurers scan files into the system in black and white in order to save file storage space. Some files, however, do not reproduce well and should be scanned in color in order to keep the integrity of the original file. Scanners with built-in barcode readers can recognize which black and white files should be scanned in color by the barcode placement. Money, time, and effort are saved as a result of the technology. Files remain intact, and file storage space is saved.

> Barcodes provide an inexpensive and efficient way to scan information into a storage reservoir. They can be used on separator pages, to tell where a document starts and ends; they can be used to populate metadata from a database; and they can even be used to automatically indicate specific scanning instructions.

Barcodes even have the ability to query a database so that existing policyholder information can be utilized without the need for manual keying, which improves indexing speed, efficiency, and accuracy. Supplemental claims documents—photographs, estimates, correspondence, receipts,

etc.—can be associated with the correct file, all without the need for manual keying. For those companies that currently use microfiche technology to capture, store, and track claims, barcodes can simplify their processes by enabling them to take advantage of more modern technology. With barcoding, processes are faster and more efficient.

Uses within Education

Barcoding can enhance any realm of business that requires high-volume scanning, as it is often used to separate and sort scanning batches. Admissions offices can use barcodes to validate information. When paper applications and their related documentation—transcripts, counselor information, etc.—are received, a barcode is created from a student's ID number and printed, ensuring that the document is indexed properly. Other information can then be extracted from a database, at which point the application is processed and scanned. Following this step, the image can be migrated into the system with automatically populated index keys and can be accessed by the Admissions personnel.

Other schools enable high school guidance counselors to print out a cover page that contains barcodes when information is submitted to the school. Information is faxed using the barcoded cover page. This allows the receiving university to put the submitted information into the school's indexing system immediately upon its receipt, facilitating speed and reliability of information, and eliminating manual keying.

Barcoding technology is popular with Admissions offices, as it has a very high degree of accuracy and a diminished chance for error. An additional benefit is that barcodes can withstand significantly more degradation than other forms of OCR.

> Barcodes are a cornerstone of efficient forms processing. If a business can place barcodes on outgoing mail, they can index information effortlessly when mail is returned. Barcodes eliminate the need to manually key in important customer and document identifying information. Incoming mail can be launched into an automated workflow with minimal human intervention, allowing for faster and more accurate processing.

Uses within Finance

The processing of online forms can be improved upon using barcode technology. Barcodes can be generated when customers print out online forms for signatures. When signed forms are returned to a lending institution, the barcodes facilitate instantaneous association with existing customer files.

Users can create barcode sheets that contain indexing information, such as an account number or name, which can be mixed into batches of scanned or imported information. The barcode applies values to appropriate user keys, all without human intervention. This reduces the potential for error and maximizes the number of documents that can be processed at any given time.

Barcodes are a cornerstone of efficient forms processing. If a business can place barcodes on outgoing mail, they can index information effortlessly when mail is returned. Barcodes eliminate the need to manually key in important customer and document identifying information. Incoming mail can be launched into an automated workflow with minimal human intervention, allowing for faster and more accurate processing.

doc∞
DocFinity®

The next step: adding workflow to the equation

Clearly, barcode technology has applications that are limited only by the imagination. For companies that require proof of delivery, barcodes provide a means to reconcile invoices with actual deliveries. Consequently, if a delivery is damaged or incomplete, a barcode can provide a way to document the situation at the point of delivery. This ensures that customers are billed for orders that are actually received, rather than for damaged or missing merchandise. Barcode technology can help businesses that manage long-term warranties, as it is far more efficient to barcode and index information for electronic storage than it is to retain boxes and cabinets of paper files for years.

Barcode technology is a powerful means of capture with almost 100% accuracy. However, organizations should note that the potential for increasing return on investment by using barcodes extends well beyond the ability to automatically index vital information. Although implementation of barcodes yields immediate benefits in terms of archiving and retrieval, its true potential is not realized until it is incorporated with workflow technology.

For documents that have a finite life span, barcodes can indicate when a document should be automatically deleted or destroyed. Encoded information can communicate with an organization's electronic hierarchical storage system to designate the lifespan of a document. This information is essential for compliance with certain federal regulations.

Barcode technology is a powerful means of capture with almost 100% accuracy. However, organizations should note that the potential for increasing return on investment by using barcodes extends well beyond the ability to automatically index vital information. Although implementation of barcodes yields immediate benefits in terms of archiving and retrieval, its true potential is not realized until it is incorporated with workflow technology.
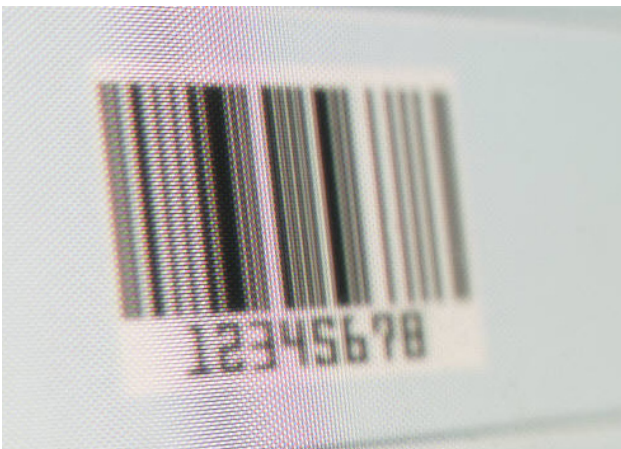
Workflow compounds a barcode's capabilities, automates procedures, and facilitates efficient processing of documents. Not only are barcoded documents effortlessly scanned, indexed, and filed; they are also routed upon receipt to appropriate personnel for the action that is required based on the rules that the workflow sets in place for automated processing. (For more information about automated workflow, please see *Electronic Filing Cabinet Syndrome (And How To Avoid It!)* By James Thumma, Optical Image Technology, Inc., at www.docfinity.com/reference/insurance_electronic_filing_cabinet.htm). Combining barcoding with workflow extends the time that documents are kept active, and ensures that the right person receives the right work at the right time. When its potential is realized, a barcode serves as the initial link in an efficient chain, facilitating savings in time, money, and effort.

To find out more about how barcodes and workflow can help your company reduce turnaround time and gain a competitive edge, please contact Optical Image Technology (http://www.docfinity.com) at 814.238.0038 or email info@docfinity.com.