

Part Two

Digital Imaging: Manufacturing

BACKGROUND

Digital Imaging is not a “new” technology. Digital cameras have been around since the 1960’s when NASA and the CIA introduced high speed, high resolution digital cameras. Since 1994, digital cameras have been available to the public. A quick look in any newspaper will reveal dozens of vendors selling hundreds of different models through thousands of outlets.

What makes digital cameras different is that the “image” they create is not on film, which has to go through several chemical processes in order to see the image. Instead, a digital camera creates an electronic file that is little different from other files created on a computer or PC. Those files can be viewed, stored, printed, e-mailed, shared or published.

THE ADVANTAGE OF DIGITAL IMAGING

The single biggest advantage digital cameras, and digital imaging technology have is that the images are available immediately. There is no need to wait days or hours for the film to be developed and prints made. The images, once captured, are available NOW.

NEW APPLICATIONS

The immediacy of digital imaging, not to mention the quality, has lent itself to hundreds of practical applications ranging from analyzing MRI’s to assisting in police work to being part of the evening newscast.

- In police work, digital images taken at crime scenes can be quickly transmitted to other law enforcement agencies and forensic specialists for immediate analysis.
- Digital images produced by an MRI can be shared on-line with specialists around the globe to assist with a diagnosis and prepare a course of treatment.
- Images captured at events on the other side of the world are instantly ready for publication in hundreds of news outlets just moments after they are captured.

With the number of practical applications growing each year, why hasn’t digital imaging caught on in manufacturing or distribution?

A quick answer might be that there aren’t any real applications for digital imaging in those industries.

That answer may be quick, but it’s wrong.

DIGITAL CAMERAS IN MANUFACTURING

A recent visit to a major manufacturer gives a glimpse into why digital imaging is becoming more important in daily operations. It also serves as a vivid demonstration of how manufacturers (and distributors) are sometimes forced to create “workarounds” that use a digital image capture process to cope with the ever changing demands of their market.

ECONOMIC FORCES: THE CUSTOMER LEAD REVOLUTION

The customer is one of the largest retailers in the world. Recently, they directed their suppliers comply with a set of comprehensive shipping requirements. The objective was to receive incoming freight faster and make it available to their stores sooner. Compliance with the shipping requirements meant the suppliers could be paid sooner.

All shipping would be done on standard sized pallets. Each pallet in an order must have 4x6 inch labels printed in the retailer’s format affixed to the four right hand corners of the pallet, 10 inches off the floor and 2 inches from the leading edge. Each label would display specific human readable shipping information and a bar code that would be used by the retailer to sort and stage product for shipment to their stores. A “license plate” bar code label would identify each pallet in an order for faster processing.

In receiving at the retailer’s distribution center, pallets are moved off the truck and placed on a turntable. Stationary bar code readers find and “read” the bar coded label. Once identified, the pallet number is validated electronically against the order. At that point the pallet is received and automated material handling technologies route it to its destination.

Speed and accuracy, not to mention the lack of human intervention, helps the retailer control inventory processing costs. Orders that cannot be received using the automated stock movement process, that is, require manual intervention, increases their costs, and those costs are charged back to the supplier.

The most common reason for manually receiving, sorting, moving and putting away pallets received from a supplier is missing or misplaced bar code labels. In each case, the retailer deducts 3% of the value of the shipment from the amount invoiced by the supplier.

Ouch!

What is a supplier to do?

THE WORKAROUND: DIGITAL CAMERAS

During the visit to this manufacturer, the supervisor in shipping for this retailer showed us a digital camera in his office. He makes sure that before pallets to this retailer are loaded onto the trailer, a digital picture of each side showing the precise location of each label is taken. In addition, as the pallets are loaded and secured on the trailer, another digital image is taken to show how each one was secured.

When all pallets are loaded and the trailer door secured, he takes another image of the back door of the truck showing that the trailer is secured and to capture both trailer number and truck company name.

At the end of his shift, this supervisor has to upload the images he took all day from the camera to his office PC. He stores them in a folder on his PC by the date of shipment to the retailer. He renames the pictures to include the ship date.

The reason for all these images is to avoid paying a 3% penalty. If there is a penalty assessed by the retailer, someone in his department would go to his PC and search the image files to find the shipment in question. Then they would print out all the images and then send them to their Customer Service Department, who would then send them to the retailer as proof the labels were placed correctly.

WHEN THE WORKAROUND DOESN'T WORK

The “workaround” this supervisor implemented worked well until more customers began implementing similar practices.

Today, supervisors in shipping share that one camera. Frequently, they can be seen scrambling through the area looking for the camera. A missing or in-use camera isn't the only problem they encounter. Because images are taken of pallets going to multiple retailers with one camera, the process of uploading, cataloging and storing them has become unwieldy. That would be bad enough, but then there are the times when the camera can't be found. When that happens, supervisors have to release the shipment and hope nothing goes wrong.

As with most “workarounds,” the process was never formally documented. Each supervisor takes images based on the requirements of the retailer they are shipping to. In addition, there are some 45 different customers who require the supplier to use 45 different label formats and comply with 45 different sets of instructions.

Shipping it “right” is getting harder and harder.

THE FONTANA IMS SOLUTION: INTEGRATED DIGITAL IMAGING

A3 Technologies, Inc. has extensive experience developing custom software for receiving, stock movement, put away, picking, packing and shipping for customers in the manufacturing and distribution markets. Through their hands-on experience in these industries, A3 developers recognized that the biggest trend in inventory management was to have real time inventory visibility. To do that, data had to be collected and databases updated in real time. A3 became expert in implementing systems that relied on wireless, bar code scanning mobile computers.

They also had seen the “workarounds” used by their customers to address customer shipping and labeling instructions weren't working.

The problem wasn't that data or images weren't available. They were, but they were disconnected both electronically and physically. Someone had to take an image, find a PC, upload it to a file, re-name it and catalogue it.

With several people doing this each day following dozens of different shipping instructions, the result was inaccuracy, inconsistency, duplication and ultimately, “lost” files.

If notified of a penalty for non-compliance, just finding the image, printing out a copy and sending it by fax, inter-office mail (or sometimes overnight) to whoever needed it took time.

If only the customer order number was known, finding the right image was doubly hard because all images are stored by ship date. If the order date was different from the ship date, which is usually the case, the images were, in effect, “lost” Even knowing the ship date might not be enough when you consider multiple shipments going to multiple customers using multiple shipping instructions.

BUILDING A BETTER MOUSETRAP: FONTANA IMS ELIMINATES THE “WORKAROUND”

The solution implemented in A3's [Fontana Inventory Management System](#) is revolutionary. Images can be captured by the mobile computer during any part of the inventory management process. As they are captured, they are dynamically linked directly to the order being shipped. In addition, any documents associated with order can be captured digitally and attached to the order electronically as it is being prepared for shipment.

With Fontana IMS, operators not only use the mobile computer to scan the bar code label on each pallet, they then use the mobile terminal's imaging capabilities to take a separate image of each of the four sides of the pallet. Those images are automatically attached electronically to the customer order.

As each pallet is loaded on the trailer, the operator captures another image showing how it was secured is easily done using the same device. When the trailer is completely loaded, the same device captures an image of the back of the truck showing the shipper name, trailer number and even how the trailer was sealed or secured prior to pull away. Each image is now attached electronically to the retailer's order that was just processed.

It isn't just that they are attached electronically. They are now instantly available employees who need access to them. When a notification of non-compliance is received, the research can be as easy as entering the order number and viewing the attached images. Not only is finding images is quick, locating the exact pallet being questioned only takes seconds. Those images can now be printed, e-mailed or even faxed electronically to the retailer.

SEAMLESS, FULL INTEGRATION

Fontana IMS from A3 Technologies has integrated digital imaging using wireless, bar code scanning mobile computers into every module from receiving to quality inspection to put away, picking and shipping.

With Fontana IMS, digital imaging, the “now” technology, has come to manufacturing and distribution in a comprehensive, versatile, easy-to-use system.

BENEFITS

The real benefits of imaging can be seen in improved quality and increased productivity at every point along the supply chain. Instead of waiting for inter-office mail, overnight mail or faxes, receiving orders, shipping documents, inventory cycle counts, put away instructions, picking orders and all associated images are available whenever and wherever needed.

Implementing Fontana IMS eliminates the use of paper which eliminates error while reducing filing and copying costs. Fontana IMS employs real-time cycle counting in its picking and put away operations, which means inventory is accurate in real time. More accurate inventory counts allow management to control inventory levels and reduce carrying costs. Even better news is that processes and procedures developed as a result of Six Sigma Process Improvement and Lean Manufacturing can be activated quickly with the deployment of Fontana IMS.

Productivity gains realized through the implementation of Fontana IMS allow many suppliers to increase inventories and service additional customers, often without increasing headcount.

Even then, Fontana IMS has the flexibility to support additional SKU's, new operations and new operators with ease.

ABOUT FONTANA IMS

Fontana IMS is a fully integrated Inventory Management System that can serve as a standalone system, as an extension of an existing ERP system (SAP, Oracle, QuickBooks, etc.) or as a multi-location enterprise system. For more information about Fontana IMS and integrated digital imaging, contact A3 Technologies at 708-708-8100, or visit our website at www.a3-tech.com.

ABOUT A3 TECHNOLOGIES, INC.

A3 Technologies, Inc. is a systems integrator. We are in the business of developing and delivering supply chain management solutions to customers in the distribution, warehousing and manufacturing markets. Our flagship software, Fontana IMS, is a fully automated, error-free, end-to-end inventory management solution developed specifically for those markets. Our specialty is combining our software with our experience in integration services to deliver tangible, bottom line benefits, whether as a stand-alone system, as the input for a customer's ERP system, or to automate LEAN manufacturing and Six Sigma process improvements.

OUR MISSION

Our mission is to combine the accuracy of advanced Auto ID technologies, the real-time speed of wireless data communications with sophisticated server and end-user applications to streamline operations throughout the customer's supply chain. Whether a standalone system or fully integrated into the customer's back office ERP systems, A-3 Technologies, Inc. software can identify and eliminate waste, improve operational processes, eliminate manual data collection and data entry errors, and support Lean manufacturing initiatives and Six Sigma process improvements in manufacturing. Using sophisticated, but easy-to-use tools, customers will not just control inventory and distribution costs, but reduce them as well. We deliver value by creating a partnership with customers, which allows them to improve product quality, increase levels of responsiveness and offer superior customer service while delivering positive, measurable bottom- line results and increased shareholder value.

OUR FOCUS

Our focus is improving our customers business. Helping our customers become more successful drives us to do what we do.

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