



Case Study – The Salvation Army

Inovity, formerly Bar Code ID Systems, Donates Custom Application, Time & Equipment to Salvation Army’s Toy/Food Distribution Program



The Greenville Chapter of the Salvation Army sponsors a Christmas Toy Distribution for needy families in Greenville, South Carolina. Bags of toys and BiLo food certificates that have been donated by local area businesses and individuals are packaged and distributed to families who have applied for the Christmas Distribution Program. Before the Christmas season 2003, the Salvation Army tracked and distributed all items manually, causing numerous delays, interruptions and obstructions in the distribution process. Spearheaded by Systems Engineer Amber Richards, BarCode ID Systems donated time, equipment and a custom tracking application to assist the Salvation Army with its 2003 Christmas Distribution Program.

The Challenge:

The Salvation Army’s existing toy distribution system consisted of manual bag identification (a printed sheet stapled to each bag) and bag distribution by a staff of volunteers on “distribution day.” Since the manual system did not allow for easy tracking or accountability of the gift bags as they were assembled or distributed, several problems ensued. Missing bags on distribution day required volunteers to prepare additional bags while recipients waited in a designated waiting area (“Trouble Area”); recipients could manipulate the system to receive multiple bags, and bottlenecks in the distribution process caused appointed pick-up times to run more than an hour behind schedule. Volunteers became harried, recipients were angry, and limited toy inventories deprived other deserving recipients of toy bags if replacement bags had to be assembled.

Project Objectives:

The objectives of the project were as follows: 1) label all toy bags as they were assembled, 2) perform a cycle count of all bags prior to distribution day to ensure the correct quantity exists for all intended recipients, and 3) establish an automated check-out system to track bags as they are distributed to the proper recipients. With this system in place, the Salvation Army would have an accurate count of all bags produced and a record of all bags distributed and their recipients. BarCode ID Systems donated all labels for the bags, provided a Symbol PDT6846 RF (radio frequency) handheld computer and 4121 Access Point for the cycle counts and distribution, and wrote a custom application for inventory, tracking and distribution of gift bags.

The Solution:

- 1) Bag Labeling — All bags were tagged with bar code label(s) after being assembled by volunteers. The bag labels (Fig. 1) were created with labeling software and consisted of the parent's last name, the child's age/gender/name, the last four digits of an assigned "Christmas Number," and a bar code with the child's "Angel Number." More than one label could be affixed to a bag to indicate gifts for multi-child families, and all bag labels would be scanned during Cycle Count and at Check Out.



Figure 1. Sample bag label.

- 2) Cycle Count — All bag labels were scanned on the Saturday prior to distribution day to ensure that each intended recipient would have a toy bag waiting for them on distribution day. Early counting and reconciliation of bags for recipients would reduce the number of people in the "Trouble Area," where recipients had to go if their gift bags could not be located.

BarCode ID Systems provided a Symbol PDT 6846 RF terminal and 4121 Access Point to use during Cycle Count. Every label scan triggered a database lookup for the child's "Angel Number." When identified, the record was flagged in the "Check-In" column to indicate the bag had been assembled and was in inventory awaiting distribution.

- 3) Check Out — On distribution day, all bag labels were scanned at check out before leaving the dock door. Scans triggered a database lookup for the child's "Angel Number," flagged the record to indicate that a bag had been distributed and was no longer in inventory, and recorded the information in the master database (Access). If a recipient went Trouble Area with a bag loss claim, volunteers could run a simple database check to determine whether or not a bag had been distributed previously.
- 4) Reporting — Reports were available as a Microsoft Access database query and included Bags in Inventory/Not Distributed and Bags Distributed.

Project Update & Photos:

The Salvation Army's Christmas Toy Distribution was a huge success and received local coverage on the Greenville evening news. The comparison between previous distributions and this year's program was staggering. Virtually every participant and volunteer were amazed at how the automated procedures made bag distribution a smooth and efficient process that ran ahead of schedule.

Bag Labeling — Volunteers began packing toy bags for approved recipients on December 1 and continued through December 20, 2003. Bar coded labels were preprinted for each child/recipient and affixed to the bags.

Because recipient families often had more than one child, a single bag could contain items for multiple children. In these scenarios, multiple bar codes on each bag (Fig. 2) ensured that each child had been served and provided the recipients with visual confirmation that each child had items in the bag.

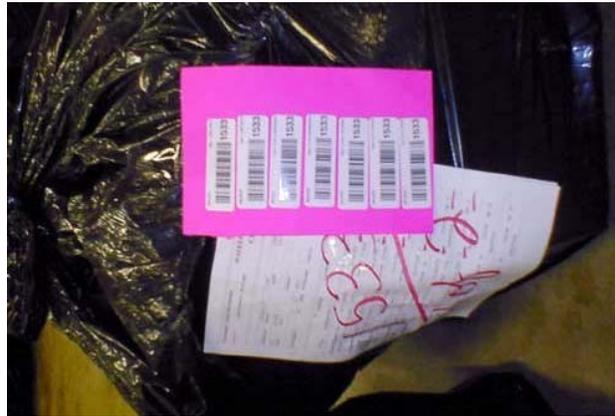


Figure 2. Sample multiple bar codes on gift bags.



Figure 3. Over 1700 toy & food bags await distribution day.

Cycle Count — A cycle count was performed at the end of the last bag packing day (December 20). The cycle count indicated that 27 bags were missing or not yet assembled. Missing bags were listed in a report for volunteers, who then created additional bags before distribution day arrived. Over 1700 bags were ultimately packed and ready for distribution day— December 22, 2003 (Fig. 3). Fig. 3. Over 1700 toy & food bags await distribution day.

Some children in the program were eligible to receive a bicycle in addition to their gift bags (Fig. 4). These children were required to meet additional application requirements including good school grades, attendance, and behavior.

Check Out — Recipients were assigned a pick-up appointment time and tag prior to distribution day. Two pick-up zones (Dock Drive-Up and Trouble Area) were on or ahead of schedule the entire day.

Dock Drive-Up volunteers used CB radios to relay tag numbers to volunteers inside, who then located the correct gift bag(s) and took them to the recipients' cars. All bags were scanned before leaving the warehouse area (Fig. 5).



Figure 4. Bicycles were given to children who met special program requirements.

If the recipient's bag could not be located, the recipient was directed to the Trouble Area so a bag could be made. Last year, cars were lined up at Dock Drive-Up until past 7:00pm, and many recipients were told that they must go to the Trouble Area after waiting hours in the Drive-UP line. Pick-up appointments were more than an hour behind schedule and recipients

were understandably agitated. With the 2003 program, cars arriving for pick-up slowed to a trickle by 2:30pm and pick-ups ended by 4:00pm. All pick-up appointments were on or ahead of schedule (Fig. 6). Last year, approximately 300 people were sent to the Trouble Area where the average recipient waited an hour; some more than two hours. Many times during the day the Trouble Area was standing room only. This year, only about 30 people were seen in the Trouble Area and no one had to wait more than 30 minutes (Fig. 7). With the 2003 program, cars arriving for pick-up slowed to a trickle by 2:30pm and pick-ups ended by 4:00pm. All pick-up appointments were on or ahead of schedule (Fig. 6).



Figure 5. Using a radio-frequency mobile computer provided by BarCode ID Systems, volunteers scan items at checkout.

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At the end of the day (4:00pm), a report was run to show how many bags remained in inventory, allowing Salvation Army personnel to contact the families the following day to arrange pick up. Only 103 recipient bags (66 families) remained unclaimed out of 1,789 total bags.

The bar coding application and equipment provided by BarCode ID Systems prevented multiple issues and streamlined the entire assembly, inventory and distribution process for the Salvation Army Christmas Toy Distribution. One unforeseen benefit to bar coded distribution was that recipients could see that volunteers were scanning and verifying bags. With such procedures in place, recipients did not attempt to come inside to the Trouble Area first to claim lost tickets.



Figure 6. Pick-up went smoothly as appointments were on or ahead of schedule.



The Salvation Army's event organizer commented that he knew bar coding would assist in some areas such as cross-checking, but had no idea what an impact it would make on the entire process.

Figure 7. Only a handful of recipients had to visit the Trouble Area, where wait times were slashed from 2 hours to less than 30 minutes.



Formerly BarCode ID Systems, Inovity is a business process improvement company that transforms technology into powerful, integrated solutions that drive efficiency and reduce costs. As a specialty IT systems integrator, Inovity designs and delivers innovative solutions that connect and relay crucial business information between all points of operational activity, in real time. By emphasizing workforce mobility, ERP data mobilization and business process intelligence, Inovity provides automated technology solutions for manufacturing, distribution, healthcare, retail and field service environments.

The company was established in 1993, is privately owned with headquarters in Atlanta and maintains sales and engineering offices in Atlanta, Chicago, Boston, Greenville, SC, Greensboro, NC, Columbus, OH, Huntsville, AL and Ft. Lauderdale. With innovation at its core, combined with solutions for productivity, agility, efficiency, connectivity, and visibility, BarCode ID Systems has become Inovity. Contact Julie A. Leonard, Marketing Director, 800-452-7418, ext. 9045, jleonard@inovity.com, www.inovity.com.