Improve Route Accounting and DSD Cost-Effectiveness with Mobility Technology

ZEBRA TECHNOLOGIES

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THE CASE FOR AUTOMATING ROUTE ACCOUNTING OPERATIONS

Companies of all types and sizes are realizing the benefits that mobility technology can deliver to their enterprise. The impact is especially strong for route accounting organizations, where mobile workers frequently interact with customers. Fact is, accuracy and productivity lead to profitability in direct store delivery (DSD) and route accounting operations.

In the grocery channel alone, DSD represents 24 percent of unit sales and 52 percent of retail profits.[1] Revenue and cash flow improve measurably if DSD sales representatives make just one more stop per day. Reducing invoice and inventory errors also reduces operating expenses by saving time for mobile and administrative staff, and by improving inventory availability. The following data[2] highlights these opportunities:

- There are discrepancies on 10.5 percent of DSD invoices issued to small-format retailers, and 15.4 percent to supermarkets and other large-format stores. Store managers, DSD sales and delivery personnel and their administrators at headquarters spend thousands of unproductive hours resolving these disputes, which are preventable through more accurate ordering and invoicing.
- The average out-of-stock rate for DSD items is 7.4 percent, but jumps to 13.1 percent for promotional items.
- Out-of-stocks result in $6 billion in lost sales annually.
- The average supermarket can reduce DSD out-of-stocks by 2.9 percent and increase annual revenue by $75,000.
- Automated check-in processes can reduce DSD receiving time by 60 percent.
- Efficient DSD suppliers spend 13.8 fewer minutes for each delivery to large-format stores and spend nearly twice as much time on merchandising than inefficient suppliers.

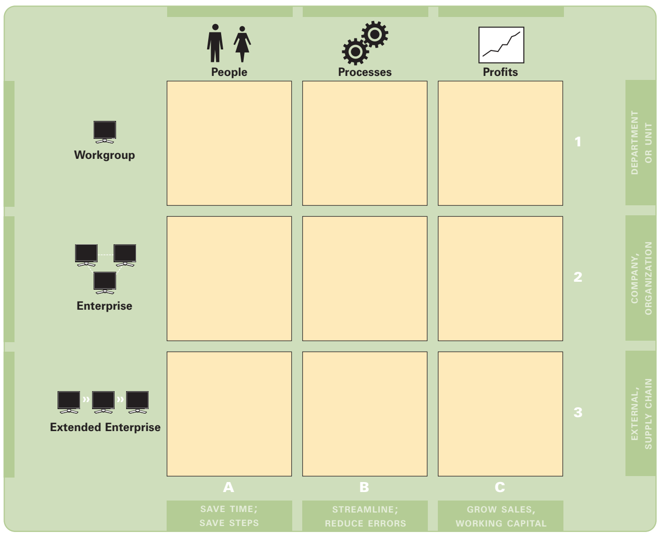
Automating DSD operations is a proven practice to help solve these problems and gain the ensuing productivity and profitability benefits. Mobile computing applications can help prevent order-entry errors and assist DSD staff in managing inventory more accurately and efficiently. Many companies are using batch handheld computers and DEX connectivity, but in today's world, this is not enough to provide sustainable operational and competitive advantages.

This white paper discusses key considerations when selecting mobility solutions, and unveils how mobility-enabled operations can improve route accounting and DSD efficiency, reduce operating expenses, and boost customer satisfaction.

1. "Powering Growth Through Direct Store Delivery," Grocery Manufacturers of America (GMA), September 2008.
2. "Unleash the Power of DSD," GMA, September 2005.

EVALUATING THE BUSINESS VALUE FOR MOBILITY TECHNOLOGY

Zebra developed the Zebra Business Value Map to help identify, classify, and categorize the benefits of mobility technology across route accounting and DSD operations. The map relates how mobile computing and printing applications affect people, processes, and profits.



Mobile automation tends to provide the best return on investment when applied to areas laden with manual processes that cause bottlenecks and frequent errors. Each organization has its own specific opportunities. Below are some example questions to consider when assessing the need and value of mobility technology for route accounting and DSD automation:

- How much time do drivers spend preparing orders and invoices?
- What happens in the office when handwritten orders or invoices are not legible?
- How much time do employees spend on data entry, both in the field and in the office?
- Do inaccurate orders cause problems with customers?
- How often do customers call about billing disputes?
- How long does it typically take to resolve these disputes? Which departments are involved?
- Could the business benefit if route drivers had more time available for merchandising and sales?
- Do employees always have the documentation needed to settle invoice, return, and credit disputes?
- What percentage of time do drivers and office staff spend handling exceptions?
- How does the business's out-of-stock rates compare with industry averages?
- Would operations benefit if route drivers could make a few more stops per day?
- How do customers rate the business's customer service?
- What are the costs of pre-printed forms used in route accounting?

MOBILITY CONSIDERATIONS

STANDARDS, SCALABILITY, RELIABILITY

Mobility solutions for route accounting and DSD operations include handheld computers running application software, mobile thermal printers, and wireless network connectivity.

For each technology, be sure to choose the solution with the optimal support of standards, scalability, reliability, and security.

	Application-level Integration	**Handheld Computer**	**Portable Printer**
Standards	Network and inter-device connection (802.11, Bluetooth®)	Operating systems (Microsoft® Windows® Mobile, Windows CE)	Thermal printing options (4" or 3" wide with a variable length)
Scalability	Application usability and compatibility	Expansion ports and networking	Production of small to large number of documents of variable lengths based upon user demand
Reliability	Partnership with best-in-class service providers	Ruggedness and durability for field usage	
Security	Strong wireless and data encryption		

MOBILITY TECHNOLOGY DELIVERS ESSENTIAL BUSINESS VALUE

To visualize how mobility solutions enhance route accounting and DSD operations, the following section summarizes the benefits achieved by Zebra customers, and places them within the Business Value Map. The section starts by outlining how mobile workers benefit from mobility solutions, using invoice preparation as an example. For route accounting organizations, the route workers and route sales representatives dwell within the workgroup level of the grid, which is the starting point on the Business Value Map.

Realize Increased Workgroup Productivity—People

The most consistent benefits from route automation are time savings and improved productivity. Handheld computing and mobile printing applications slash the time required for invoice and order preparation. Organizations are often surprised to learn how much route paperwork influences other operations. When organizations begin to question and measure their paperwork-related activities, the value of route automation becomes clear.

In a non-automated environment, route specialists typically create invoices by handwriting on three-part forms. Notes or special instructions may be crammed in the margins or written on a separate paper, which can be lost or separated from the actual invoice. Completing invoices on a mobile computer instead of on manual forms saves time because software can automatically populate customer information and other fields, and drop-down menus simplify other activity. As a result, employees at the workgroup level get the benefit of improved productivity. Automating the pre-call process with application software also saves time, as does using route-planning software for scheduling daily activities.

Improve Workgroup Accuracy—Processes

Manual processes provide no safeguard against errors; poor handwriting and low-quality carbon forms increase the chances of inaccuracies. Improved accuracy is a major benefit of automating the process. Using a handheld computer application with preloaded, pre-verified customer information and SKUs prevents errors. Most software applications require users to verify data if they attempt to enter questionable quantities, prices, SKUs or other information.

Changing processes to produce invoices, order confirmations and other documentation on demand instead of pre-printing at the start of the day saves time, and improves accuracy because the printout reflects the latest changes. Thermal printers also enable other process improvements. Route workers have the option of mounting them in the vehicle or choosing wearable or handheld models that save time by eliminating the trip to the vehicle to generate the invoice.

Well-developed software applications also give route workers the ability to handle exceptions and disputes in the field, which saves time for office staff and helps satisfy customers quickly and professionally.

Enhance Workgroup Efficiency—Profits

The productivity and process improvements mobile workers get from handheld computing applications translate into more profitable route operations. Mobile automation projects consistently reduce operating expenses. They also hold strong potential to help increase revenues through improved productivity.

DSD personnel spend between 2.1 percent and 6.0 percent of their time in retail stores preparing invoices.[3] The time may not seem significant, but the difference is that some drivers spend almost three times as much time on invoice preparation as other drivers. Completing invoices quickly helps workers spend more time on activities that can strengthen relationships with customers and ultimately grow revenues. In fact, retailers recognize the importance of DSD labor when improving the in-store experience.[4] Efficient DSD personnel spend 50 percent of their time in stores merchandising, compared to just 27 percent for inefficient operators.

With automation, route professionals can complete more stops per day, which improves inventory turns, return on assets, and cash flow. Making just a few more stops per day, per route, also enables businesses to expand routes and grow their customer base without adding personnel. There is a parallel benefit in the office; businesses can experience a workload reduction for billing clerks, customer service representatives and other support staff. Automated mobile systems are highly scalable, freeing up resources for revenue-generating tasks.

There are also more immediate and quantifiable profit improvements. Simply replacing traditional invoices and other forms with less expensive thermal printer paper reduces operating costs. Furthermore, replacing paper-based documents and combining automated process workflows with digital process content can help reduce energy requirements, and thereby lower carbon footprints.[5]

3. "Unleash the Power of DSD," GMA, September 2005.
4. "Powering Growth Through Direct Store Delivery," GMA, September 2008.
5. "GMA Information Technology and Effectiveness Study," IBM/GMA, 2008.

Streamline Enterprise Tasks—People

Within route accounting organizations, enterprise-level staff includes dispatchers, billing clerks, customer service representatives, inventory managers, warehouse workers and other personnel who work with or support route representatives. At the enterprise level, the main benefit of mobile technology is the reduction of labor needed for data entry and processing. Workers in the field can quickly record invoice data on mobile computers, and upload the data to direct billing and inventory systems. There is no manual labor required to decipher handwritten invoices and notes, enter them into the appropriate systems, and file the original paperwork. Eliminating these tasks also reduces the opportunity to introduce errors.

Save Time Within the Enterprise—Processes

Mobile automation is very effective for reducing invoice errors—an area where many organizations have room for improvement—considering the average invoice error rate ranges from 10.5 to 15.4 percent.[6] The 10.5 percent discrepancy rate should generate 105 inquiries to customer service representatives (CSRs) or account managers per 1,000 orders filled. If the average call takes 12 minutes to resolve (a conservative assumption, considering the time required for order lookup, investigation, credit authorization, and computer entry), the company would spend 21 hours per month resolving errors. At the average shipment error rate, DSD suppliers would need a full-time customer service representative dedicated to error resolution for approximately every 7,600 orders.

If CSRs earn $10 per hour, the direct labor cost for error resolution is $210 per month per 1,000 orders. If the company earns a healthy 10 percent margin, it must win $2,100 in new business to offset the cost of errors; at 5 percent margin the figure jumps to $4,200. The calculation does not include labor costs associated with returns processing, savings from preventing rush shipments, costs of additional deliveries to fulfill orders, or lost revenue from unreported over-shipments. Mobile automation also gives route workers the ability to resolve errors in the field, which further lightens office staff workload.

Boost the Enterprise Bottom Line—Profits

Printing invoices at the time of delivery gives sales representatives the opportunity to review them with customers, which helps prevent errors and disputes. The process can also help cash flow. The alternative to on-site invoicing is for route workers to turn in piles of paperwork to billing clerks at the end of each shift. This creates another opportunity for errors to enter the system as clerks re-record the billing information. More significantly, it also adds costly delays to the billing cycle. Consider drivers who finish their Monday shift, then turn the daily invoices into the billing department. In the best case, clerks enter the information into the billing system and mail the invoices the next day. The customer will receive them in the mail two or three days later—a total of three to four days after the visit. Companies that follow this standard business practice suffer from a three or four-day cash-cycle disadvantage when compared with their competitors that bill on site.

Enterprises can accelerate the cash-cycle advantage by using mobile computers and mobile printers to accept payment on delivery. Many companies routinely wait 30 days or more to pay invoices. Requiring payment on delivery eliminates invoice-processing delays since there is typically no lag time for recording it in the enterprise information systems. As a result, the automated process improves the cash cycle by at least a month. In addition, mobile printers with integrated credit card readers make it convenient and simple to accept mobile payment and improve cash flow even further.

Customers appreciate in-stock products, accurate invoices and efficient replenishment; thus, mobile automation plays a part in building customer satisfaction. Earning customer confidence can ultimately win more shelf space and business.

6. "Unleash the Power of DSD," GMA, September 2005.

Drive Value to the Extended Enterprise—People

Processes that make tasks easier for route personnel also tend to make life easier for their customers. For example, if orders are complete and accurate, customers are spared from rechecking inventory and placing rush orders to cover for shortfalls (and from having to prepare over-shipments for return). If orders are consistently accurate, customers may save labor by cutting down the time they spend checking incoming orders. Automated check-in processes for route drivers can reduce receiving time by 60 percent, which benefits the driver and customer alike.[7]

Customers also benefit by receiving legible paperwork from route drivers. The consistent print quality from thermal printers creates quality invoices, receipts, orders and other forms that customers can easily process, and will remain legible after clerks process and file the forms. The result is fewer questions that take time and effort to resolve.

Refine Extended Enterprise—Processes

Customers can put electronic processes in place to take advantage of handheld computers used by delivery drivers. Many handheld computing applications for route accounting have features to ensure that drivers accurately deliver orders, which also directly benefits the customer. Validating delivery saves time during the receiving and auditing processes, and promotes inventory accuracy, which in turn simplifies inventory management and reduces the need for exception management.

Lift Extended Enterprise Margins—Profits

Accurate orders are an important step to maintaining accurate inventory. Mobile automation further promotes inventory accuracy because it enables representatives to quickly count inventory through bar code scanning and validate accuracy with software applications. These benefits extend to returns and credit processing. Accurate orders, combined with accurate shelf and back-room inventory, helps retailers optimize their inventory and reduce costly out-of-stocks.

Supermarkets alone risk losing $6 billion in annual sales from out-of-stock DSD products, with out-of-stocks for the top 25 DSD product categories averaging 7.4 percent. For promotional items, the out-of-stock rate climbs to 13.1 percent. The average supermarket can increase annual revenue by 2.9 percent or $75,000 by reducing out-of-stocks.[8]

Supplier processes that save time also help customer profitability. Recall that personnel spend between 2.1 and 6.0 percent of their time preparing invoices. The same study found efficient DSD operations require 7.2 fewer minutes at the back door, 4.2 fewer minutes to process credit returns, 3.0 fewer minutes for check-in verification, and similar time savings for other processes. These figures can be hard to develop on a customer-by-customer basis, but customers should know intuitively that efficient suppliers with highly professional route personnel deserve repeat business and referrals.

7. "Unleash the Power of DSD," GMA, September 2005.
8. "Unleash the Power of DSD," GMA, September 2005.

ZEBRA® MOBILE PRINTERS

DEPENDABLE AND FLEXIBLE

Printers used in route accounting and DSD applications are typically thermal models wearable on a belt or utility strap, or secured in the vehicle. Thermal printers use heat to transfer the print image and have displaced impact as the dominant print technology used in mobile applications. This shift occurred due to thermal's outstanding reliability, ease of use, and superior total cost of ownership (TCO). Thermal printer solutions target a variety of mobile operations, whether users prefer vehicle-mounted or portable units, cable or wireless connectivity, and other features.

Zebra printers are available in a variety of designs to meet the needs and preferences of each mobile workforce. Mobile printers must be comfortable and easy to use or they will not deliver productivity benefits. While overall weight is important, balance, grip, and ease of carrying and operation remain vital. Several options exist for mobile printer portability such as belt clips, shoulder straps, and carrying cases of varying material from waterproof to lightweight nylon.

SAVE MONEY ON PAPER SUPPLIES

On-demand mobile printing improves the professional look of receipts, service records and other paperwork given to customers, while also reducing form costs. It is increasingly acceptable to replace 8.5-by-11-inch three-part forms with smaller documents, which are easier to store and ultimately save the issuer money because less paper is used. Some companies use mobile printers to print variable information like invoice amounts or delivery contents on labels applied to forms. This satisfies customer desires to keep using familiar forms and saves time by eliminating handwriting and tedious manual recording.

Mobile printers can print text, logos, graphics, and bar codes on durable receipts, and labels of different sizes and thicknesses, and many have integrated magnetic stripe readers for payment card processing.

Most models accept a variety of form, label, tag, ticket, and other media for producing durable receipts, invoices, return labels, inspection labels, security marks, and other labels. Top-coated media resists ultraviolet light and remains readable for years, eliminating receipts that fade. Many types of liner-less media also exist, which eliminates the waste and disposal problems associated with peel-away liners used with adhesive labels.

Designed with common language support in mind, Zebra mobile printers enable users to print using the same commands as their legacy Zebra tabletop or desktop printers. While at the customer location, drivers can quickly print complex labels, symbologies, and customized graphics that help differentiate their corporate identity.

WIRELESS CONNECTIVITY ENABLES SEAMLESS MOBILITY

Mobile printers use two forms of wireless connectivity. Short-range wireless replaces the cable connected between a printer and mobile computer. Printers may also have a direct connection to enterprise wireless networks. DSD workers can access wireless networks when they are at remote offices or other company facilities to receive their daily assignments and instructions, download customer lists and inventory records, and transfer transaction data at the end of the shift.

Using wireless for cable replacement improves ergonomics and productivity. Wireless systems are more reliable because there is no chance for printer cables and pin connectors to break. This is a tremendous advantage in DSD operations, where users are often miles away from their headquarters and do not have immediate access to replacement parts. Bluetooth® technology is very popular and effective for cable replacement because it provides excellent range, speed, and connectivity.

Mobile printers from Zebra support a wide range of wireless options through modular hardware, enabling anywhere, anytime communications. Businesses can choose the wireless connectivity that best suits their needs including 802.11b/g or Bluetooth 2.0. Because Zebra mobile printers support multiple wireless security and encryption standards, IT departments can feel confident that their networks and critical data remain secure.

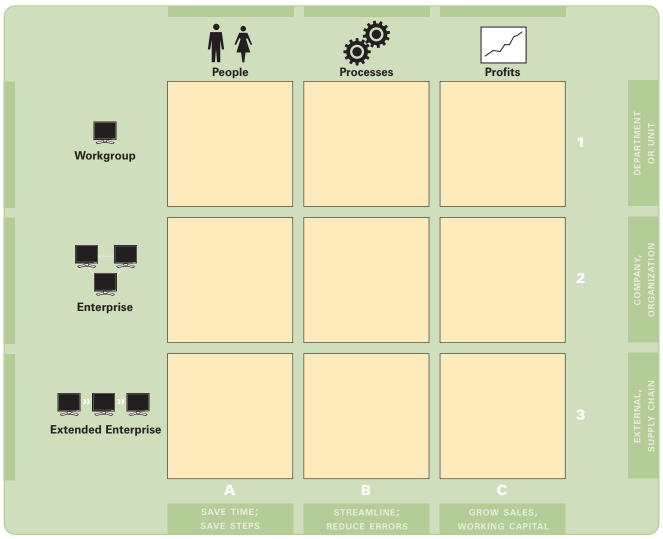
LONGER BATTERY LIFE—HIGHER SHIFT AVAILABILITY

How the printer manages its internal power supply impacts overall battery life and application effectiveness. Battery life varies widely based on printer usage. Print volume, label size, the amount of wireless activity, and other factors all affect how long batteries last before recharge or replacement. It is critically important in route accounting and DSD applications to have enough battery life to power computers and printers for the entire shift, or workers cannot complete their daily tasks. Adapters are available so battery chargers can plug into vehicle cigarette lighters.

Users must test their applications to ensure that the batteries they use consistently perform as needed and will not contribute hidden expenses to the total cost of ownership. For example, nickel metal-hydride (NiMH) batteries have a higher initial cost than nickel cadmium (NiCAD) products, but have less performance degradation over time, are more efficient at holding their charge, and have a longer life span. Lithium-ion (Li-Ion) cells offer the highest power-to-volume and power-to-weight ratio of the three. For example, in a typical printer application, a lithium-ion battery pack producing 7.2 volts has 30 percent more power than a nickel metal-hydride pack, with half the volume and half the weight.

MOBILITY BOOSTS PROFITABILITY

The final Business Value Map contains all of the elements of the grid with their associated benefits. Route accounting and DSD departments can use the grid to help create the value justification for mobility projects.



Automating route accounting and DSD operations provides proven value to businesses by enabling processes that improve efficiency, reduce costs, and increase revenues. Basic automated order entry, delivery confirmation, and invoicing provide significant business value and professionalism. The benefits and ROI can grow substantially by leveraging mobile computing, printing, and wireless communications capabilities to automate additional activities. Even small reductions in error and out-of-stock rates can produce cumulative savings that quickly justify the investment.

A global leader respected for innovation and reliability, Zebra offers technologies that illuminate organizations' operational events involving their assets, people and transactions, allowing them to see opportunities to create new value. We call it the Visible Value Chain.

Zebra's extensive portfolio of marking and printing technologies, including barcode, RFID, GPS and sensoring, turns the physical into the digital to give operational events a virtual voice. This enables organizations to know in real-time the location, condition, timing and accuracy of the events occurring throughout their value chain. Once the events are seen, organizations can create new value from what is already there.

For more information about Zebra's solutions, visit www.zebra.com.

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