



# Digital Forms Technologies Streamline Retail Operations

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WHITE PAPER

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## GLOBAL RETAIL INSIGHTS OPINION

Leading retailers eliminate processes that result in unexpected costs, poor execution, or unsatisfied consumers. Retailers that utilize assets, people, processes, and technology most efficiently will be winners, even in tough economic times. Global Retail Insights' survey of 75 retailers regarding their use of streamlined printing and data capture technologies makes it clear that for many, there are numerous opportunities to improve. Distributed forms printing and data capture technologies reduce costs, improve process efficiency and data accuracy, and enable "green" operations.

Retailers should evaluate how they can extend the value of current investments and invest in new technology that substantially enhances data acquisition and forms processing and removes barriers to operations improvement. Improving these labor-intensive and error-prone processes will position retailers to be more customer centric, thereby freeing operations to focus more energy on serving customers well.

## IN THIS WHITE PAPER

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In this white paper, Global Retail Insights, an IDC company, discusses how retailers are utilizing digital capture technologies to reduce costs, improve process efficiency and data accuracy, and be more "green." Results from a survey fielded in September 2008 provide the basis for an evaluation of the current situation, benefit opportunities, and future outlook for digital capture technologies in retail.

In this white paper we explore the state of forms processing (paper and electronic) across operational areas but target forms processing that supports store operations. Based on the survey results, Global Retail Insights believes many retailers are missing a significant opportunity to improve distributed enterprise forms processing and data acquisition. We identify processes that retailers should streamline from paper to electronic forms utilizing in-store multifunction printing, dot matrix printing, on-demand printing, color printing, and digital pens.

It is somewhat surprising that retailers are not taking full advantage of streamlined forms processing, digital capture, and digital sign technologies, since retailers, while not historically the first to adopt most technologies, were fast adopters of data capture for in-store POS and ordering processes. With the exception of segment leaders, retailers have largely not extended their investments to incorporate streamlined forms processing and digital forms capture for processes such as refunds, special orders, special deposits, layaway, new hire paperwork and applications; signature capture for processes such as receiving confirmations and invoice payment authorizations; and digital signs and electronic shelf tags to replace large paper and human resource-intensive store-based processes.

There are significant benefit opportunities for retailers. Given the store multiplier effect, the value in implementing technology that improves process efficiency, improves accuracy, and reduces overall costs is magnified. Retailers should evaluate how they can extend the value of current investments and invest in new technology that substantially enhances data acquisition and forms processing and removes barriers to operations improvement. Improving these labor-intensive and error-prone processes will position retailers to be more customer centric, freeing operations to focus more energy on serving customers well.

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### **Summary of Key Findings**

Some of the key findings from our survey of 75 retailers are as follows:

- **Finding #1 — A full 88% of retailers still use a combination of paper and electronic forms.** Clearly, putting a computer on every desk in the retail store and mobile devices in the hands of store operations staff has not eliminated the use of paper. The retail forms universe is split 50/50 between paper and electronic forms. Five percent of the respondents claimed exclusive use of electronic forms, and 7% claimed exclusive use of paper forms.
- **Finding #2 — Nearly 80% of functions use paper forms.** Many processes that do not rely completely on paper forms have some paper-based component.
- **Finding #3 — More than 31% of forms are still printed centrally or purchased externally.** This is a huge problem in retail operations. Since these forms are not as important as the merchandise retailers sell, boxes of forms get stuffed in corners and closets, under check stands, and in many other places only to be discovered in annual or biannual inventory or executive visit cleanups.
- **Finding #4 — Data acquisition is still immature.** Sixty-two percent of data acquisition is done manually. Seventy-seven percent of forms require input into electronic systems — which incurs avoidable labor costs.

## Summary of Recommendations

Global Retail Insights recommends that retailers take the following actions:

- **Complete a forms processing and printing inventory.** Look for the quick wins and biggest opportunities. Many operational activities can be automated, but simply have not been considered. Processes with the following characteristics should be reviewed:
  - **Centrally printed documents distributed to retail stores.** These documents may be more efficiently printed in-store. The reduced cost of producing these forms centrally may not outweigh the total cost of print, distribution, and storage. And in some cases, the store and the consumer are inconvenienced by the unavailability of these forms. For example, signs or shelf labels that cannot be printed in-store may result in handwritten temporary signs and labels that are incomplete and disrupt the shopping experience.
  - **Documents, such as receiving and order documents, that are printed only to provide a medium to validate or insert quantities.** These documents generally require that the written quantities be entered into an electronic system in-store or at corporate headquarters. Electronic forms provide a means to capture this data in real time, reducing unnecessary printing and paper-based workflow.
  - **Signature capture requirements necessitate paper forms.** Documents such as manifests, invoices, and some hiring paperwork are printed to enable signature capture. Digital capture technology enables a fully electronic process wherein the signature and any other handwritten information are uploaded directly to the electronic document. Documents can be printed on demand as necessary.
  - **High customer service performance requirements.** Electronic forms expedite in-store customer service tasks such as rebates, refunds, special deposits, special orders, and layaways. Fast, consistent service satisfies consumers and eases the burden on strained in-store resources.
- **Map the forms inventory to existing in-store technology and to more efficient new technology.** Consider the following options when mapping current print processes to new, more streamlined options.
  - **Distribute forms to processing applications hosted in-store for on-demand printing.** Printers utilized include multifunction printers, label printers, dot matrix printers, and color printers, depending on application.

- **Digitally capture vital information in real time.** Convert paper-based data capture processes to electronic processes by utilizing current systems or by implementing digital capture technologies that capture data and signature.

## **METHODOLOGY**

This research was sponsored by OKI Data Americas and conducted by Global Retail Insights. The primary research component of the paper consisted of formal surveys with IT directors from 250 firms across the manufacturing, transportation/logistics, and retail industries in North America. To be included in the study, the firms had to have more than 1,000 employees. Each respondent was screened based on involvement with relevant technologies and business processes at his/her firm. Results of the study are presented in aggregate in the figures throughout this paper. Extensive secondary research was also performed by Global Retail Insights in the course of preparing this study.

Global Retail Insights feels strongly about the business value of the types of solutions discussed in this analysis. However, this paper is not intended to recommend any specific solution or vendor.

## **SITUATION OVERVIEW**

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### **Good Asset Utilization Yields High Performers**

The current economic downturn will be most painful to those retailers that are not maximizing the potential of current assets or that are burdened by inefficient, error-prone processes because they have not invested in new technology. A pattern emerged when Global Retail Insights recently reviewed the technology portfolio of retailers in each segment that are clearly leading in revenue growth, profitability, and return on assets. There is a distinct correlation between the winning retailers and their technology strategies. Retailers that lead the pack invest in technologies that enable greater levels of efficiency and execution excellence. This translates into optimal asset utilization and, ultimately, the right inventory in the right place at the right time at the lowest possible operating expense. Leading retailers eliminate processes that result in unexpected costs, poor execution, or dissatisfied consumers.

## Operations Remain Hampered by Manual Forms Processing

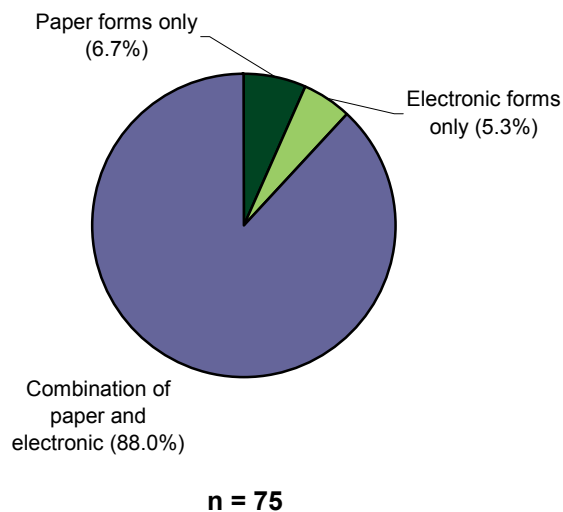
The electronic revolution, putting a computer on every desk in the retail store and mobile devices in the hands of store operations staff, has not eliminated the use of paper. The retail forms universe is split 50/50 between paper and electronic forms. Five percent of the respondents claimed exclusive use of electronic forms, and 7% claimed exclusive use of paper forms. A full 88% of respondents still use a combination of paper and electronic forms (see Figure 1). Nearly 80% of processes rely partially or completely on a paper-based component (see Figure 2).

These processes often fall below the radar when store innovations are considered and are victim to the adage "if it ain't broke, don't fix it." In reality, they are broken, and much efficiency and operational cost savings is left untapped. Refer to the Benefits sections for solutions.

### FIGURE 1

#### Use of Forms in Current Print Environment

Q. Does your current print environment utilize paper forms, electronic forms, or a combination of both?

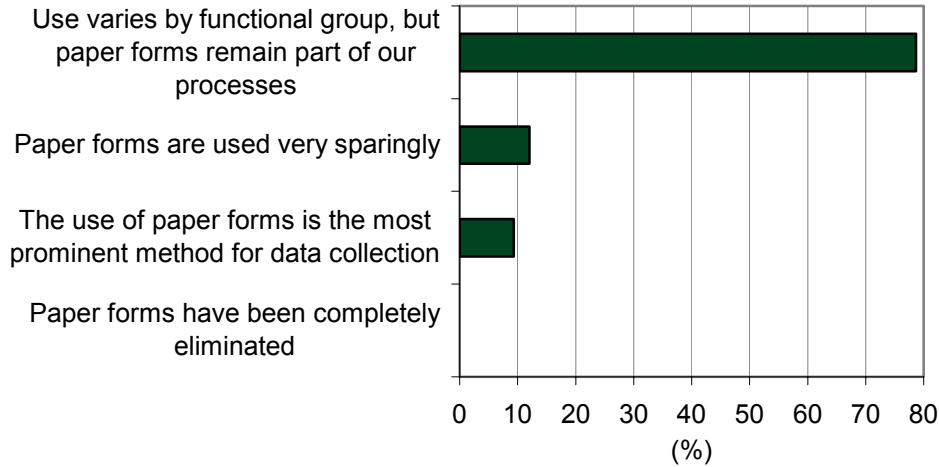


Source: Global Retail Insights, 2008

**FIGURE 2**

Use of Paper Forms

Q. Which statement best describes the use of paper forms at your company?



n = 75

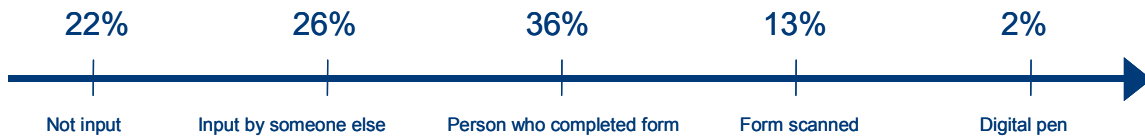
Source: Global Retail Insights, 2008

**Data Acquisition Is Still Immature**

A surprising 77% of forms require input into electronic systems (see Figure 3). Thirty-six percent are input by the person who captures the data, and 26% are input by someone else; 22% are not input; 13% are scanned for automated input; and only 2% are completed with a digital pen (see Figure 3). Manual data entry imposes completely avoidable labor costs and results in frequent errors. Digital data capture can be accomplished in real time with handheld computers, tablets, digital pens, or digital signature capture devices for signature capture specifically.

**FIGURE 3**

Data Acquisition Maturity



Source: Global Retail Insights, 2008

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## **Paper Forms Are Not "Green," Even If You Recycle**

More than 31% forms are still printed centrally or purchased externally. The central distribution of forms incurs distribution handling, storage, and transport costs and poses numerous problems for retail operations. Forms are often unavailable, sometimes because they are not ordered or in-stock at the warehouse and sometimes because they cannot be found. Since these forms are not as important as the merchandise retailers sell, boxes of forms get stuffed in corners and closets, under check stands, and in many other places only to be discovered in annual or biannual inventory or executive visit cleanups.

It is encouraging that our survey showed that more than 68% of forms are printed on demand from templates or copied from document "masters." This demonstrates a move in the right direction, with some way to go to streamline data capture and print operations and to be more "green." Forms produced and not consumed are wasteful, as is the unnecessary carbon cost of distribution.

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## **Store Operations Process Improvements**

Survey respondents were given a list of processes and asked to rate both the importance of manual forms and the opportunity for improvement (see Table 1). For manual forms usage, a rating of greater than 2.5 indicates a heavy reliance on manual forms. For improvement opportunity, a rating of less than 2.5 indicates a significant opportunity. More than half of the manual forms listed were given a high rating. Our research found that in many cases, a high reliance on manual forms correlates to an equally significant reported improvement opportunity as in the case of new hire paperwork, store reports, invoices, and employment applications. However, refunds, special orders, special deposits, and rebate claims all had improvement ratings over 2.0, which suggests that many of the respondents were not fully convinced of the value of streamlining these processes. Many retailers already complete these documents electronically, eliminating redundant error-prone work and satisfying consumers with faster service. In general, the improvement opportunities were not as high as they should be, indicating that there is no clear recognition that process improvements could reduce the reliance on paper forms.

Respondents reported that digital signage and rentals were the least significant opportunities — we beg to differ. Rentals often require multipart paperwork because there is a presumption that pieces of paper need to stay in the hands of all parties involved — a more evolved single-part receipt would work just as well for the customer, and the electronic record would suffice for the retailer. Digital signage in the form of electronic shelf labels or larger digital signs is a huge

opportunity to reduce errors and increase customer satisfaction while cutting the labor cost to hang signs and tags. Understandably, because the cost of digital signage is high, adoption will be slow. But there is an intermediate step that can be taken now, with significantly lower entry cost — that is, the electronic distribution of sign and label data with on-demand print in-store.

**TABLE 1**

Current Paper Forms Use Versus the Digital Forms Opportunity

Process	Manual Forms Usage: >2.5 = Still a Factor	Improvement Opportunity: <2.5 = Significant
Digital signage	3.00	2.25
New hire paperwork	3.00	1.59
Invoices	2.84	1.72
Product labels (markdowns, variable weight items)	2.77	2.23
Store reports (loss/theft, sales, receiving, productivity, etc.)	2.67	1.95
Employment applications — significant enhancement	2.65	1.61
Refunds	2.51	2.03
Special orders	2.36	2.15
Store manifests	2.33	1.97
Special deposits	2.17	2.27
Store order forms	2.07	1.95
Rentals	2.04	2.39
Rebate claims	2.03	2.23

n = 75

Source: Global Retail Insights, 2008

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## **Process Improvement Challenges**

Many retailers have recognized the value in automating data collection with digital capture technologies. But there are many others whose IT staff and IT budgets are fully utilized for other initiatives. Retail leaders recognize that the use of manual data capture and centrally distributed forms is inefficient and a poor use of human capital. To be a customer-centric retailer — a highly desired trait in a competitive, crowded retail space — retailers will want to address this as a high-priority problem. Two obstacles that prevent many retailers from making appropriate investments to automate data collection are perceived ROI and unrecognized opportunities.

### ***Perceived ROI***

Perceived ROI is the underlying issue — retail CIOs expect digital capture and distributed print operations to be cost prohibitive. Whenever new infrastructure is required in-store, CIOs see dollar signs. Without a comprehensive current and future needs and cost benefits analysis, they are only guessing that they cannot afford the initiative. For example, if a color printer is installed at every store primarily to replace centrally distributed store signs, a large up-front capital expense is required, but retailers may be surprised by reduced operating expenses. The number of signs can be reduced as stores tune the number of signs to print based on their needs and can replace signs as necessary. In many cases, new infrastructure may not be required. Existing dot matrix, multifunction, or color printers may simply need to be more fully utilized.

### ***Unrecognized Opportunities***

Many other initiatives require less effort and capital, but they probably have not been scrutinized recently, and therefore the opportunity lies undiscovered. For example, invoices, manifests, and order forms do not need to be printed if all that is required is a signature record or edits to receipt or suggested order quantities. Capturing data in real time via handheld or tablet computer or with a digital pen eliminates the secondary human data acquisition step and improves data quality, streamlining workflow in the process.

## **FUTURE OUTLOOK**

Opportunities abound in retail to modernize forms processing. In the current economic downturn, CIOs will take a hard look at all processes that incur avoidable costs. Once the inefficiencies of paper-based forms processing surfaces, the smart CIO will initiate a project to tackle the long list of quick win projects and more capital-intensive projects. The implementation of electronic shelf tags and digital signage may have to wait as capital is too constrained for these initiatives, but many centralized print and data entry processes will be replaced with in-store on-demand print and digital capture technologies.

Retailers will focus on store-based operational inefficiencies, including the processing of new hire paperwork; back-office processes such as invoices, receipts, and manifests; and customer service forms processes such as refunds, rebates, special deposits, and special orders. Retailers will need to reduce operational expenses to be more efficient in light of reduced sales projections and capital constraints. The benefits of streamlined store-based forms printing and digital capture are noted in the following sections.

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### **Benefits of Streamlined In-Store Printing**

- **Reduced production costs.** Print the right number of forms on demand in-store.
- **Reduced response time.** Change promotional signage more rapidly in response to competition and analytics.
- **Reduced distribution costs (including storage, staff, and transportation).** Print forms where they are needed.
- **Reduced waste/being more green.** Relevant forms are available when they are needed. Forms printed on demand never need to be discarded because they have been updated electronically and are available immediately.
- **Improved customer service.** Signs, shelf labels, returns, rebates, and special order forms are always available and correct.

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### **Benefits of Digital Capture**

- **Ability to store/retrieve information efficiently.** Gain access to electronically captured information in real time, including data related to orders, receipts, employment forms, and a range of customer service forms.
- **Process efficiency/lower costs.** Eliminate error-prone and labor-intensive manual forms processes. Data acquisition utilizing both a paper-based process and an electronic input process is redundant.
- **Timeliness of data and compliance.** Eliminate the delays related to secondary data acquisition and improve compliance by ensuring accurate data collection and signature capture.
- **Data accuracy.** Incorrect data creates a problem that trickles through all related processes depending on the form, including inventory, employment, accounting, customer service, and in-store signage.
- **Reduced document management costs.** The store multiplier effect really works against retailers when document management costs are considered. Large physical and operational expenses are incurred meeting regulatory and corporate policy-related distribution and storage requirements. Hardcopy storage consumes valuable space and requires tedious human retrieval processes.

We asked survey respondents to rank the benefits of electronically capturing data from paper forms. The top response was the ability to store/retrieve information efficiently by an overwhelming margin — more than 50%. Process efficiency/lower costs and better timeliness of data shared the second spot with close to 30%, and higher accuracy of data and reduced document management costs were close behind.

Table 2 maps current store operations print and data capture processes to benefit opportunities, making it abundantly clear that the benefit opportunities are pervasive. They will need to be customized to each operation.

<b>TABLE 2</b>				
Streamlined Forms Processing and Digital Capture Benefit Opportunities				
Benefit	Store Signage	New Hire Forms and Employment Applications	Purchasing/Receiving (Invoices, Receipts, Manifests, Orders)	Customer Service (Special Orders, Layaways, Rentals, Rebates, Refunds)
Ability to better store/retrieve information	X	X	X	X
Process efficiency/lower costs	X	X	X	X
Better timeliness of data	X	X	X	X
Higher accuracy and completeness of data	X	X	X	X
Reduced document management costs	X	X	X	X
Authorized signature capture for regulatory compliance		X	X	X
Reduced waste — being more green	X	X	X	X
Reduced production time	X	X	X	X
Reduced distribution costs	X	X	X	X
Reduction of data entry personnel		X	X	
Higher customer satisfaction	X		X	X
Higher levels of data security		X	X	X
Improved quality of products and services	X	X	X	X
Better inventory management			X	X

Source: Global Retail Insights, 2008

## Technology Options Available

Table 3 provides brief descriptions of some of the technology options that would be employed in a retail setting. Most forms can be more efficiently utilized in-store when the appropriate technology is put in place.

**TABLE 3**

### Technologies That Facilitate Streamlined Printing and Digital Capture for Retailers

Technology	Description	Retail Use
Digital pens and paper	A digital pen and paper uses a peripheral pen device to capture handwriting, digitize results, and record to a computer.	Digital pens and paper are utilized for applications such as store ordering, receiving, special orders, and customer services.
Digital signs	Digital signs automate message delivery to signs throughout the store, ensuring 100% accuracy. They also may be interactive, facilitating customer/consumer messaging.	Digital signs are still expensive — they are currently in use in many retail trials. They are used to facilitate 1:1 promotional interactions with consumers and to create eye-popping consumer messages.
Dot matrix printers	Dot matrix printers are impact printers that use a matrix of small pins to create precise dots on print media.	Dot matrix printers are used in cash register applications and for standard store reporting, but they can also accomplish multipart printing for invoices, rentals, and special orders, eliminating the need for central distribution. Laser printers have more versatility and produce higher-quality output.
Electronic shelf labels (ESLs)	An electronic shelf label, also known by the acronym ESL, is a system used by retailers for displaying product pricing on shelves.	ESLs are not new, but they have not been fully adopted because of high cost. New technology is changing this equation. The increasing legal cost of shelf front/POS compliance issues may justify greater adoption.
Kiosks	Kiosks house a computer-based or browser-based application that manages a secure user interaction.	Kiosks often provide consumer information such as store maps, coupons, recipes, and product information and collect data for employment applications or for special orders, prescription refills, rebates, etc.
Laser printers — black-and-white (B&W) and color printers	B&W and color laser printers are toner-based printers that adhere toner to a light-sensitive print drum and use static electricity to transfer the toner to the print medium. Laser printers are known for high-quality prints, good print speed, and a low (B&W) cost per copy.	Laser printers print most retail forms, including shelf labels, store reports, invoices, receiving records, and special customer service forms; B&W is most frequently used. Color printers are increasingly used to print store signs and other reports.
Multifunction printers	Printers that include nonprinting features are sometimes called multifunction printers (MFPs), multifunction devices (MFDs), or all-in-one (AIO) printers. Most MFPs include printing, scanning, and copying among their features.	Multifunction printers can do it all for many retailers, not only filling multiple printing needs but also enabling forms scanning and data capture.

Source: Global Retail Insights, 2008

## ESSENTIAL GUIDANCE

Leading retailers eliminate processes that result in unexpected costs, poor execution, or unsatisfied consumers. Retailers that utilize assets, people, process, and technology most efficiently will be winners, even in tough economic times. Global Retail Insights' survey of 75 retailers regarding their use of streamlined printing and data capture technologies makes it clear that for many, there are numerous opportunities to improve:

- **People: Organize a forms management and information acquisition improvement initiative.** Employees, customers, and vendors are a good source of input for ideas about where time is wasted. Focus on the result — the most efficient delivery and execution of forms-based printing and data acquisition for each of these constituents. Identify how resources could be utilized better at corporate headquarters, distribution centers, and in stores to satisfy consumers, facilitate information exchange with suppliers, and attract new employees.
- **Process: Prioritize processes for improvement.** Formalize a forms processing and printing inventory. Look for the quick wins — biggest opportunities — and get started right away. Many operational activities can be automated, but simply have not been considered. Some require capital investments, while others simply require rethinking the process. Move as many printing and data capture processes to the store to reduce costs and waste and to streamline processes.
- **Technology: Define an approach based on functional needs.** Map the forms inventory to existing in-store printing capabilities and identify additional technologies where necessary. Consider color printers for sign printing, dot matrix for multipart form printing — if copies are needed and electronic workflow is not the current direction — and multifunction printing if scanning documents is a requirement. Consolidate print devices — many retailers still have a dedicated printer for different tasks. Use pen-based technology to enable real-time data capture, improve accuracy, and eliminate redundancy.

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