Understanding Total Cost of Ownership in Building an Advanced Store Systems Business Case

WHITE PAPER Sponsored by: IBM

Scott Langdoc January 2008

GLOBAL RETAIL INSIGHTS OPINION

Retailers are working overtime to firmly establish their competitive place in an industry where hypercompetition reigns and macroeconomic challenges such as higher energy and housing costs increasingly impact the consumer's wallet. Many merchants see the opportunity to create a new shopping experience — supported by advanced store systems technology — as the best path to improving business performance on all levels, including higher sales, improved profits, and increased customer satisfaction. But the approaches and models used to assess point-of-sale (POS) technology platforms have broadened far beyond just capital investment, and new Global Retail Insights research has shown that retailers across different segments often view their investment priorities differently. Global Retail Insights has identified a number of important criteria for evaluating both the true costs and the key business value of a new store systems strategy.

IN THIS WHITE PAPER

This white paper provides a detailed view of the considerations required to evaluate advanced store systems platforms and how to ensure that the retailer's business priorities are fully addressed in the business value analysis. It examines the importance of using a total cost of ownership (TCO) model as a more accurate reflection of investment cost and benefit than mere asset purchase. It analyzes research results that show the different store systems evaluation priorities used by different retail industry segments and provides sample retailer models and financial metrics to use as guides, concluding with a review of the full value proposition that can result from a broad, strategic investment in new retail POS technologies.

January 2008, Global Retail Insights #GRI210287

J VIEW (

SITUATION OVERVIEW

Predictive Insight and Effective Store Execution Define Merchant Leaders

To say that retail is highly competitive seems a gross understatement. Not only do global megamerchants continue to dominate the low-price battle based on their sheer economies of scale, but new market entrants (e.g., Tesco in the United States, Best Buy in China), along with a blurring of traditional market segments, are making a complex industry even rougher to navigate. This ubercompetitive battle will be hard to win on price alone, so retailers that want better brand value and improved performance are aligning technology changes at store level to ensure delivery of a consumer experience that results in bigger transactions, higher trip frequency, and higher shopper satisfaction.

To deliver the levels of service, personalization, and efficiency that savvy consumers demand, more retailers are ramping up long-delayed POS replacement projects as they realize that their legacy systems do not have the capabilities to support the required new store-centric strategy. IDC's 2007 *Worldwide Retail IT Spending Guide* forecasts that worldwide POS hardware and software spending in 2008 will be \$9.58 billion, increasing to \$11.8 billion by 2010.

Assessing POS Total Cost of Ownership: Thinking Beyond Just the Purchase

Given the capital requirements necessary to complete a chainwide store systems replacement project, it is understandable why many retailers become transfixed by only equipment acquisition costs. However, a focus on initial POS capital spend leaves out most of the cost and benefit elements realized during the entire operational life of the equipment. Store systems projects that orient their financial assessment around the TCO are more likely to get an accurate reflection of the value proposition of store technology investments. Stated more directly, retailers can expect that *only 20–45% of the TCO of a given store systems investment will be initial purchase price* (see Figure 1). Therefore, retailers would benefit from expanding their selection criteria to consider factors that optimize the life-cycle costs of their POS solution. Acquisition costs are trending downward toward 20% of the total cost of ownership. — Scott Langdoc, Research VP, Global Retail Insights



TCO Across the Store Systems Life Cycle

While actual technology purchase is an obvious, early element of any store systems transformation project, four major store systems TCO components (or life-cycle "steps") impact the overall value proposition and the retailer's ability to reduce TCO (see Figure 2). The four steps are highlighted in the following sections.

Evaluation and Procurement

The most "traditional" step of a POS project involves the direct and indirect costs of solution assessment, vendor management, and capital purchase. Often included in the initial buy are direct infrastructure needs such as store wiring and network platforms.

Staging and Deployment

Almost any major retailer planning a chainwide POS rollout requires a formal process by which delivered technology is centrally and formally configured, tested, and prepared for distribution to a chain's individual stores. This leaves only physical installation, connectivity, operational testing, and training to be done at each store location.

Store Operations and Systems Management

This is the iterative component of a store systems TCO model. All costs, including power consumption, field support, as well as system and field service management, seen over the course of the asset's operational life are captured at this step. The impact of centralized systems management on store operational performance is also assessed, including resulting business value surrounding transaction efficiency, automated updates, asset tracking, system uptime performance, training investment, and labor costs.

Removal and Disposal

At the end of the POS equipment's operational life, the financial impact of asset disposition must be analyzed, including related costs and business value surrounding any store deinstallation, recycling options, potential asset resale, as well as outright disposition — which is increasingly a subject of regulation.

FIGURE 2



TCO: Four Influence Factors

New Global Retail Insights research indicates that retailers point to four major TCO influence categories that help organize the overall TCO analysis of a store systems investment into structured sets of capital and operating costs coupled with business value contributions from the new technology (see Figure 3).



Source: Global Retail Insights, 2008

As outlined in the TCO Analysis Scorecard in Figure 4, each of the specific TCO cost elements and created business value metrics can be evaluated through the lens of one or more evaluation criteria categories we call "TCO influence factors," which are noted in the following sections.

Reliability and Usability

Ultimately, nothing is more important to a retailer's evaluation of new store systems business value than to know that the POS technology it has chosen has been designed and developed by the vendor for the unique operating conditions of a retail store. Store labor costs continue to increase, and with 30–100% cashier turnover rates (depending upon segment), the need for store management to lower the per-employee POS training cost becomes imperative. The cost to service POS equipment has increased as well, often paid as a fixed monthly maintenance fee based on historical failure rates. And nearly every retail CFO wants the longest operational life possible out of any new store technology investment.

While vendor investments in component selection and grueling equipment endurance testing help to validate retail "ruggedness," real reliability will be quickly validated through the value of lower overall system failures. In addition, the ability to transparently integrate legacy components (both hardware and software) into new base platforms helps extend the useful life of existing capital investments. Store systems uniquely engineered for store employee and consumer usability directly address a critical business value for store management — the speed by which a cashier can train on and adapt to using a well-designed POS terminal will impact checkout efficiency, allowing an improvement in the ratio between labor costs and transaction volume, not to mention the shopper's perception of a speedier retail payment process.

Serviceability

Improved serviceability can result in a chainwide lowering of monthly store hardware maintenance rates — which are often fixed operational costs pinned to historical (high) failure rate statistics. Other costs are equally high, including initial system installation and help desk support. Retailers should be looking to assess unique, service-oriented design elements of new store systems that help improve field efficiency on all types of service calls — installation, maintenance, and unit upgrading (e.g., tool-free component access).

The best store technologies now have integrated logic to more automatically dial in on specific component failures, often remotely, resulting in fewer required visits to the store. They have provided flexible connectivity to support advanced new peripherals as well as long-installed and proven legacy devices. With better mean-time-torepair (MTTR) metrics come increased sales opportunities that won't be lost simply because the retailer couldn't take the customer's money because of a broken POS terminal. As uptime performance increases, so does the opportunity for the retailer to negotiate more advantageous maintenance rates — often as much as 25–30% lower than traditional POS service costs.

Manageability

Retailers realize that more centralized technical oversight and control in this highly decentralized IT environment (store operations) leads to lower store IT installation and support costs. In addition, POS capital assets require more granular tracking, and flexible store operations requires more frequent software updates and system driver installations. Even the smallest chain retailers dealing with multiple terminals over multiple, dispersed locations can struggle with the command and control of these expanding costs.

When evaluating the system management capabilities of advanced POS retailers must obtain integrated, component-level platforms. management capabilities, allowing IT support not only to streamline initial POS installations but also to be more predictive and responsive to alert-generating issues with equipment at the store level — potentially all before a support call is made or a field technician is dispatched. Allowing centrally orchestrated software updates without involving instore staff gives retailers much more control over planned downtime. And when an IT support person can be automatically alerted to potential failures and inform the impacted store about the resolution, then a frantic repair call does not have to be placed from the field.

Environmental Focus

Retailers will want to know more about the environmental design characteristics of their store technology investments and their vendors' green strategies and initiatives. Some investment areas will be less tangible (e.g., use of recycled materials), but other eco-oriented priorities will directly affect financial performance and any TCO evaluation. These priorities include field upgradeable designs increasing asset life, asset recycling potential, and — most importantly — energy efficiency.

The use of the latest generation of PC-based processor families is providing a long-sought POS "holy grail" — improved CPU performance with as much as a 35–40% reduction in average energy usage — which includes much more intelligence about using "low usage" or standby power when operating conditions for the POS system do not require full performance. The sample case of a retailer illustrates this point. The retailer is considering replacing its 5,000 terminals with new terminals that operate 33% more energy efficiently and could see annual energy costs for POS terminals alone be reduced by \$131,000 (using a U.S. national energy rate average of \$0.10/kWh). This would be a nearly \$1 million cost reduction over the average seven-year lifetime of the newly deployed terminals. The need for retailers to "think green" has transformed from early political correctness to a real cost-reducing and consumer-oriented strategic initiative reflecting greater corporate social responsibility.

FIGURE 4

TCO Analysis Scorecard

Store Systems TCO Influence Factors	Direct Costs	Direct Business Value
Reliability and Usability	 Store labor and training Asset life span Maintenance Depreciation 	 Hardware/software compatibility Improved throughput Higher productivity Lower failure rates Increased shopper satisfaction
Serviceability	 Installation Help desk Field service Maintenance 	 Service plan flexibility Efficient service and upgrades Accurate failure diagnostics Fewer service trips Reduced downtime
Manageability	 Distribution Asset tracking Software deployment Device management 	 Centralized policy enforcement Software update frequency Predictive problem alerts Proactive remote monitoring Planned vs. unplanned downtime
Environmental Focus	 POS acquisition Electricity Component reuse Disposal 	 Improved energy/performance ratio Dynamic low-power savings Regulatory disposal compliance Broader recycling options Corporate social responsibility

Source: Global Retail Insights, 2008

Retail Segment Priorities Can Impact TCO Calculations

While TCO-oriented technology evaluations and selections are still relatively new to the retail industry, especially for in-store systems, the prevailing thought has been that "all retailer needs and priorities are the same" when assessing overall TCO. To determine if and which segment differences actually exist, Global Retail Insights conducted an analysis of select retailers across different industry segments. The study focused on what unique segment differences in store systems operating models or cost/benefit priorities existed and what potential impact those differences could have on creating an effective TCO analysis. A total of 50 North American retailers were surveyed and asked questions surrounding TCO-impacting operating practices and technology evaluation priorities. The replies were aggregated into three broad industry segment categories: food retailing, big box specialty/mass merchant, and small box specialty. A number of interesting segment differences were observed, including those discussed in the following sections.

Grocers: Service Costs and Longevity Are Critical to TCO

Survey Results Analysis. The fast-moving consumer goods philosophy of grocery retailers led to significantly higher transaction volumes than those in the other retail segments — grocery retailers' transaction volumes were nearly double those of the big box retailers and more than double those of the small box specialty retailers. However, transaction sizes among the grocery segment were significantly smaller than those of the other segments, as higher-value nonfood items drive up comparable averages. While the survey results in this document show that store employee turnover rates among the grocery respondents were 28% higher than those of the big box respondents, our segment analysis actually shows that turnover in the grocery segment is relatively low compared with turnover in other segments mostly due to unionization and higher wages. Another interesting data point is that the food retailers — unlike either big box/mass merchant or small box retailers — had no operational practice for turning off POS equipment during off-hours or when not in use — although systems were in idle/standby mode approximately 50 hours per week. Grocery stores were open an average of five hours more per day than stores in the other segments.

TCO Priorities. When asked to prioritize TCO cost components, food retailers placed greater priority on field service costs and the system's average useful life (see Figure 5). Fifty-seven percent (57%) of food retailers surveyed said they already had deployed advanced POS systems management.

FIGURE 5

Grocery Investment Drivers



Source: Global Retail Insights, 2008

Grocery Retailer Sample TCO Business Value Worksheet. Global Retail Insights has developed the set of calculations shown in Figure 6 to illustrate the potential financial impact of business value improvements. These calculations leverage retailer responses to the primary research as well as parameters derived from a "typical" grocery retail chain. This is not a complete TCO analysis; rather, it is meant to provide context to the wide array of business value improvements available and the specific segment metrics for grocery retailing.

With grocers hyperfocused on extending the useful life of their POS equipment, the worksheet in Figure 6 shows that the use of system management to actively power down terminals during off-hours combined with broad flexibility to utilize legacy hardware and software components can drive over \$400,000 in annual business value. Even the

slightest labor reduction due to cashier efficiency drives over \$200,000 in business value in our sample worksheet. These types of reductions cumulatively constitute a \$6.5 million life-cycle business value return.

_ _ _

FIGURE 6						
Segment TCO Profile: Grocery Retailer						
	Example Grocery Retailer			Grocery Segment Cost	Metrics	
	Sales	\$5,000,000,000		Asset Life (Years)	7	
	Stores	200		Cashiers/Store	14	
	Terminais	2,400		Turnover Rate	39%	
				Open Hours/Day	16	
				Hourly Sales/Store	\$4.340	
				Days Open/Year	360	
				Energy Cost (\$kWh)	\$0.10	
				POS Terminal Cost	\$2,500	
	POS Replacement - Example Bu	isiness Value				i
	Influence Factor	Metric	Impro	wement	Annual Rusiness Value	
		Methe	mpre	Jvement	Annual Dusiness value	
	Reliability/Usability	Training	15 ho	urs/new employee	\$19.000)
	Reliability/Usability	HW/SW Compatibility	\$650/	/terminal	\$223,000)
	Reliability/Usability	Cashier Productivity	1.5 ho	ours/week	\$219,000)
	Serviceability	Maintenance Fees	\$25 te	erminal/year	\$60,000)
	Manageability	Software Updates	\$100/	/store/update (4)	\$80,000)
	Manageability	Deployment	\$40/t	erminal	\$14,000)
	Manageability	Asset Tracking	14 ho	ours/store/year	\$40,000)
	Manageability	Asset Life	25% l	onger life	\$172,000)
	Environmental	Power Usage	35% r	eduction (90W to 60W)	\$42,000	1
	Environmental	Power-Off Automation	90% r	eduction per hour closed	\$56,000	1
		Grocery Retailer - Enter	orise Bi	usiness Value		
			В	usiness Value – Annu	al \$922,000)
			Bus	siness Value – Life Cyc	le \$6,452,000)
	Notes:					
	Segment cost metrics are from G	ohal Retail Insights resear	ch surv			
	Energy cost is U.S. national avera		on Surv	cy.		
	All numbers in this figure may not	he exact due to rounding				
		De exact due to rounding.				
	Source: Global Retail Insights, 2008					

Big Box/Mass Merchant: Cost Containment and Systems Management Are Critical to TCO

Survey Results Analysis. Big box retailers responding to the survey averaged just over half the weekly transaction volume of their grocery competitors. Each big box POS transaction took 23% longer to complete than each grocery retailer POS transaction; however, considering the average transaction size (\$320) was much larger, that disparity is not as

relevant. Big box survey respondents said that 50% of terminals are powered off during nonuse. Only 29% of retailers in this segment said they are currently using POS systems management technology.

TCO Priorities. One of the key TCO priorities identified by this segment was remote system management, which is not a surprise considering the number of average POS terminals per store — up to two to three times more than food retailers and as much as 10 times more than some small box specialty retailers. That same terminal/store ratio also led this segment's survey respondents to state that hardware costs are still very important — even with other terminal-specific TCO cost elements identified (see Figure 7).



Source: Global Retail Insights, 2008

Big Box/Mass Merchant Sample TCO Business Value Worksheet. Global Retail Insights has developed the set of calculations shown in Figure 8 to illustrate the potential financial impact of business value improvements. These calculations leverage retailer responses to the primary research as well as parameters derived from a sample big box retail chain. This is not a complete TCO analysis; rather, it is meant to provide context to the wide array of business value improvements available and the specific segment metrics for big box and mass merchant retailing.

FIGURE 8

Example Big Box Retailer	
Sales	\$36,000,000,000
Stores	800
Terminals	24,000

POS Replacement - Example Business Value

Segment TCO Profile: Big Box/Mass Merchant

Die Deu Commont Cost Mater

Big Box Segment Cost Wetrics	
Asset Life (Years)	7
Labor Cost/Hour	13
Cashiers/Store	20
Turnover Rate	28%
Open Hours/Day	11
Hourly Sales/Store	\$11,364
Days Open/Year	360
Energy Cost (\$kWh)	\$0.10
POS Terminal Cost	\$2,500

Influence Factor	Metric	Improvement	Annual Business Value
Reliability/Usability	Training	15 hours/employee	\$68,000
Reliability/Usability	HW/SW Compatibility	\$650/terminal	\$2,229,000
Reliability/Usability	Cashier Productivity	1.5 hours/week saved	\$812,000
Serviceability	Maintenance Fees	\$25 terminal/year	\$600,000
Manageability	Software Updates	\$100 per store per update (6)	\$480,000
Manageability	Deployment	\$40/terminal	\$138,000
Manageability	Asset Tracking	20 hours/store/year	\$208,000
Manageability	Asset Life	25% longer life	\$1,715,000
Environmental	Power Usage	35% reduction (90W to 60W)	\$286,000
Environmental	Power-Off Automation	90% reduction per hour closed	\$910,000

Big Box Retailer - Enterprise Business Value

Business Value – Annual	\$7,441,000
Business Value – Life Cycle	\$52,089,000

Notes:

Segment cost metrics are from Global Retail Insights research survey.

Energy cost is U.S. national average.

All numbers in this figure may not be exact due to rounding.

Source: Global Retail Insights, 2008

Providing system management to enforce automated power-down during closed hours delivers not only tremendous economic value from extended asset life but also immediate operational cost recovery from the reduction in unnecessary power usage. Using the metrics in Figure 8, we find that if the capital cost for a typical POS replacement is \$60 million (24,000 terminals * \$2,500), then the business value return from these types of reductions over the average life cycle is \$52 million — representing nearly 87% of the original purchase price.

Small Box Specialty: Software, Service, and System Management Are Critical to TCO

Survey Results Analysis. Transaction volumes of small box specialty retailers were much lower than those of the other segments, although average transaction size was much higher. The number of store employees was much lower for obvious reasons, but the turnover rates among small box specialty respondents were the highest of all the segments.

TCO Priorities. Even though the average POS terminal count is much lower in this segment than in the big box/mass merchant segment, survey respondents did place equal importance on remote system management — most likely due to the highly decentralized nature of their typical store locations. Only 25% of POS terminals were powered down in this segment. Critical TCO priorities for small box specialty retailers included software cost and remote system management (see Figure 9).

FIGURE 9



Source: Global Retail Insights, 2008

Small Box Specialty Retailer Sample TCO Business Value Worksheet. Global Retail Insights has developed the set of calculations shown in Figure 10 to illustrate the potential financial impact of business value improvements. These calculations leverage retailer responses to the primary research as well as parameters derived from a sample small box retail chain. This is not a complete TCO analysis; rather, it is meant to provide context to the wide array of business value improvements available and the specific segment metrics for small box specialty retailing. Cashier productivity improvements resulting from new POS usability along with lower costs surrounding the automation of bimonthly software updates deliver over 60% of the annual business value in this example. *The life-cycle business value return from these types of reductions of \$5.3 million is 177% of the original capital investment for this sample retailer* (1,200 terminals * \$2,500).

FIGURE 10

Segment TCO Profile: Small Box Specialty Retailer

Example Specialty Retailer

Sales	\$1,000,000,000
Stores	400
Terminals	1,200

Small Box Specialty Segment Cost Metrics

Asset Life (Years)	5
Labor Cost/Hour	12
Cashiers/Store	8
Turnover Rate	45%
Open Hours/Day	11
Hourly Sales/Store	\$631
Days Open/Year	360
Energy Cost (\$kWh)	\$0.10
POS Terminal Cost	\$2,500

POS Replacement - Example Business Value

Influence Factor	Metric	Improvement	
Reliability/Usability	Training	15 hours/employee	\$22,000
Reliability/Usability	HW/SW Compatibility	\$650/terminal	\$156,000
Reliability/Usability	Cashier Productivity	1.5 hours/week saved	\$375,000
Serviceability	Maintenance Fees	\$25 terminal/year	\$30,000
Manageability	Software Updates	\$100 per store per update (6)	\$240,000
Manageability	Deployment	\$40/terminal	\$10,000
Manageability	Asset Tracking	10 hours/store/year	\$48,000
Manageability	Asset Life	25% longer life	\$120,000
Environmental	Power Usage	35% reduction (90W to 60W)	\$15,000
Environmental	Power-Off Automation	90% reduction per hour closed	\$46,000

Specialty Retailer - Enterprise Business Value

Business Value – Annual	\$1,062,000
Business Value – Life Cycle	\$5,310,000

Notes:

Segment cost metrics are from Global Retail Insights research survey.

Energy cost is U.S. national average.

All numbers in this figure may not be exact due to rounding.

Source: Global Retail Insights, 2008

THE BUSINESS CASE FOR A STORE Systems transformation strategy: The value proposition

Even when a project has both IT and store operations sponsorship and support along with a compelling financial analysis, "selling" senior leadership on the overall value proposition of a new, chainwide store systems platform is, well, challenging. For stakeholders to have any hope of succeeding in their quest, they must adhere to a few key business case precepts:

- **Significantly improved TCO.** Quickly offsetting heavy capital costs with quantified lifetime operational improvements through a detailed TCO methodology is imperative. Orchestrating the TCO value messages around brand-specific priorities such as increasing transactions, geographic expansion, or competitive pressures helps to personalize the project rationale and vendor selections.
- Improved market flexibility. No retail brand differentiation strategy has ever worked long term without the capability to quickly respond to changing competition or to quickly deploy new marketing, merchandising, or shopping experience initiatives. Quantifying the role that advanced store systems play in "speed to market" becomes extremely important.
- **Dial-tone reliability.** System uptime directly affects top-line revenue and bottom-line profitability. The increasing expense and customer-related impacts of aging POS equipment must be used as key justifications for the new investment. Showing that selected store technology vendors orient their development and design priorities around "retail ruggedness" helps further the business case.
- Increased efficiency. Labor costs are increasing. Transaction sizes are (hopefully) getting bigger. Consumer marketing opportunities are becoming more interactive. These are all important causal factors in ensuring that core store systems are contributing to improved transaction throughput and improved cashier performance with less training. Leveraging system management functions for preventative maintenance helps further the business case for how much store systems efficiency can be improved.

CONCLUSION

Changing store technology platforms isn't easy — ever. Not just because of the broad investment implications or project complexities but also because of the potential risks and business impacts such a transformation can have on literally every facet of retail operations. However, retailers lulled into legacy "status quo" thinking will continue to be passed or lapped by merchant leaders willing to put the consumer first in the shopping experience enabled through advanced store technology platforms. These same leaders will expand their value proposition thinking and vendor selection criteria to include evaluations that are oriented around ways to reduce TCO while delivering an efficient, flexible platform that empowers store employees while satisfying their growing list of profitable shoppers.

ESSENTIAL GUIDANCE

- Consumers who seek a differentiated shopping experience will ultimately find those retailers that have been willing to make the store technology and process investments necessary to ensure that shoppers benefit from targeted influence and greatly increased system efficiency.
- The only accurate way for retailers to fully assess their potential store systems investment strategies and vendor options is to employ a TCO methodology one that ensures all cost components and important subsegment priorities are properly integrated into platform selection and the overall value proposition.
- Retailers must organize their store systems TCO thinking around the most impactful influences on cost reduction and their impact on store operations. Focusing evaluations on retail-oriented usability, service-improving designs, embedded management functions, and the practical metrics of vendor practices around sound environmental thinking will ensure that store systems replacement deliver both improved customer-facing capabilities and costreducing functionality.

METHODOLOGY

This research was sponsored by IBM. The primary research component of the paper consisted of formal interviews with IT directors from 50 retailers in North America. To be included in the study, retailers must have more than 20 stores and annual revenues over \$20 million. 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 conducting a TCO analysis for POS system investment. However, this paper is not intended to recommend any specific solution or vendor.

ABOUT GLOBAL RETAIL INSIGHTS, AN IDC COMPANY

Global Retail Insights, an IDC company, provides retailers and IT vendors that serve them with research-based advisory and consulting services that enable industry executives to maximize their technology investments, minimize technology risk through accurate planning, benchmark themselves against industry peers, adopt industry best practices for merchant and IT alignment, make more informed technology decisions, and drive technology-enabled performance improvement and market innovation. Global Retail Insights provides full coverage of the retail value chain, with specific emphasis on IT and business process leadership in the areas of global supply chain, enterprise merchandising, demand intelligence, and next-generation store and channel operations. Global Retail Insights provides a portfolio of research and advisory services that are relevant to the needs of both retailers and industry vendors.

Copyright Notice

Copyright 2008 Global Retail Insights, an IDC company. Reproduction without written permission is completely forbidden. External Publication of Global Retail Insights Information and Data: Any Global Retail Insights information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate Global Retail Insights Vice President. A draft of the proposed document should accompany any such request. Global Retail Insights reserves the right to deny approval of external usage for any reason.