Total Cost of Ownership for Point-of-Sale and PC Cash Drawer Solutions: A Comparative Analysis of Retail Checkout Environments, 2008 Update

WHITE PAPER

Sponsored by: IBM

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GLOBAL RETAIL INSIGHTS OPINION

One of the primary opportunities for retailers to address increasing competitive challenges and economic pressures is to deliver on the promise of an advanced, differentiated shopping experience that works to drive revenue growth, improved profitability, and increased consumer satisfaction. While improved customer service is indeed critical, merchants considering new investments in retail checkout environments must also stay focused on lowering IT and operational costs.

Global Retail Insights' analysis of both point-of-sale (POS) and PC cash drawer (PCCD) solutions for retail selling and tendering systems shows clear advantages, in overall total cost of ownership (TCO) and customer service delivery, for POS over PCCD.

IN THIS WHITE PAPER

This white paper presents a TCO analysis of IBM's POS solutions and PCCD solutions running on IBM PC platforms in the United States and Europe to uncover the actual costs associated with both systems over their useful life. The goal of this white paper is to help retailers understand the differences in all the cost components involving POS and PCCD checkout system investments as they evaluate future store technology purchases.

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EXECUTIVE SUMMARY

Faced with increased choice in retail brands and buying channels, consumers are becoming much more demanding, and as a result, retailers are required to place more focus and attention on the delivery of a differentiated shopping experience. This consumer-centric strategy, against the backdrop of an industry increasingly dominated by large global players, requires retailers to continually challenge the way they do business in order to drive brand value in new and innovative ways. Both line-of-business (LOB) and IT executives in the retail industry are facing a number of decisions about how best to meet both the opportunities and the challenges associated with this transformation.

Transaction data gathered at the point of sale ultimately drives a retailer's understanding of its business, not only in monitoring current financial performance but also in providing valuable business intelligence necessary to drive efficient inventory management, merchandising planning, supply chain management, and customer care.

Retailers make checkout solution decisions with the mindset that the in-store technology will support their business for an extended period of time, often up to seven years or more. Therefore, the costs and benefits of the different POS devices must be clearly delineated in order to aid retailers when they are making decisions on spending.

With this information in mind, Global Retail Insights conducted a series of interviews with retailers in the United States and Europe. This research focused on companies that had deployed either PCCD or POS solutions throughout their store environments and sought to identify the implications of investment in either deployed platform. The analysis from this research aimed to define for retailers the overall TCO as well as the functional benefits of using these systems.

Total Costs

Many retailers have a long-standing perception that industry-specific POS technology is more expensive to purchase and maintain than PCCD technology. Global Retail Insights' research indicates that in reality, this is not the case. While POS systems are usually more expensive at the point of initial acquisition, the ongoing operational costs are such that within the first year of ownership, the total cost of PCCD passes that of POS. Over an average useful life of five years, the total cost of PCCD solutions will exceed that of POS by 31%. Beyond the total costs, Global Retail Insights' research and analysis uncovered the following findings:

- When noncore system costs are analyzed individually — peripherals, software, and staffing — they are all cheaper over the useful life of a POS system than over the useful life of a PCCD system.

- The focused design and usability elements of POS systems offer improved customer experience by speeding up transactions by 44% while also delivering 15% improved availability/uptime over PCCD.
- Fixed asset utilization of POS systems is greater than that of PCCD systems due to the improved transaction efficiencies and the longer average useful life of POS deployments.

As retailers seek to take advantage of the benefits of new in-store applications and overall operational efficiency, they must weigh the relative costs and benefits of the two system technologies when making the final purchasing decision. Because of the commodity nature of the technology, PCCD will usually offer lower initial base system acquisition costs for retailers along with more configuration and back-end integration choices. Because they are purpose-built for the harsh conditions of a retail store environment, POS systems offer the key advantages of retail-hardened durability, specialized installation and technical support, and most importantly, lower total cost.

SITUATION OVERVIEW

Because the retail industry remains highly competitive and cost-sensitive, even the smallest shifts in the margin and customer profitability can result in a shift between industry leaders and followers. Over the past few years, retailers have faced a number of specific challenges, including:

- The increasing market share and volume dominance of the top 10 global retailers
- An explosive growth in new information sources that drive consumer influence
- A blurring of retail segments
- A deep fragmentation of shopper demographics
- The now proven power and flexibility of cross-channel retailing

Leading retailers realize that to address these challenges with a consumer-centric strategy means creating a "next-generation" in-store environment that consistently fulfills and exceeds customer expectations. Retailers that are willing to invest in improved store operations processes, better education, associate training, and new technologies to enhance this required shopper experience will increase market share and also improve operational efficiencies. These retail leaders are investing not only in technology to upgrade traditional in-store technologies such as POS (which represents the majority of retailers' investments) but also in inventory management, replenishment systems, customer relationship management (CRM) systems, and self-service technologies. All of these technology investments are undertaken in order to improve both store process efficiencies and the customer experience.

POS Transactions Are the Core of Retail Business Intelligence

Since the mid-1990s, the retail industry has seen some impressive changes in the use of technology to enhance top-line sales and profitability, with PCCD and POS solutions now sitting at the center of that store technology evolution. Transaction data gathered at the point of sale ultimately drives a retailer's understanding of its business, not only in monitoring current financial performance but also in providing valuable business intelligence necessary to drive efficient inventory management, merchandising planning, supply chain management, and customer care.

Retailers make checkout solution decisions with the mindset that the in-store technology will support their business for an extended period of time, often up to seven years or more. However, as a group, retailers are known for delaying needed store technology purchases, resulting in legacy systems that are difficult to maintain and integrate into ever-changing store infrastructures. This "no new checkout if possible" mindset has been changing, and for the past few years, retailers have made store-centric technology investment a higher priority — with as much as 32% of total retail IT spend being directed toward shopper-focused technology. Although this trend is continuing, retailers are taking a more pragmatic approach toward this investment. Therefore, the costs and benefits of the POS devices must be clearly delineated in order to aid retailers when they are making decisions on spending.

Total Cost of Ownership Analysis of IBM's POS and PCCD Solutions

Our TCO analysis of PCCD and electronic POS checkout systems is modeled based on the experiences of users of IBM's products over a five-year lifetime of use in the United States and Europe. The 36 retailers involved in the research represented nearly 6,500 locations (see Table 1 for further details). While some geographic differences exist, POS customers in the research tended to be larger companies with significant, decentralized store counts.

The TCO model matched the costs of the two systems against the benefits businesses received. The main challenges that retailers face when deciding to buy checkout systems are:

- **Understanding all the direct and indirect costs involved.** Retailers need a clear picture of all the costs associated with purchasing a POS system so that budgets can be planned and justified.
- **Making sure to improve the customer experience.** Every store-centric IT investment should have as base criteria the ability to increase cashier efficiency *and* the ability to improve customer satisfaction, primarily through faster checkout.

- **Maintaining 100% uptime.** The checkout process is the most crucial and customer-influencing step in any shopping experience, and retailers can ill afford for checkout systems to fail when customers are ready to pay. Maintaining 24 x 7 operational reliability becomes increasingly important as retailers extend their hours of operation to meet customers' needs.

TABLE 1

Respondent Profile

	Europe	United States
Respondents	15	21
Locations	2,967	3,532
Retail segments	**% Breakdown**	
Specialty	63	
Food services	14	
Grocery	7	
Other	16	
	% POS	**% PCCD**
Employees (<500)	25	74
Locations (<100)	37	62
Systems (<500)	39	63

Source: IDC, 2006

Total Costs

Previously, PCCD solution providers emphasized the low-cost nature of their commodity PC-based equipment while providing only limited peripherals tailored to the specialized retail environment. PCCD was clearly less expensive up front, but because of the gap in retail-centric capabilities, merchants received much less for their lower capital investment. Today, as PCCD solutions come with more capabilities, the initial cost differential has narrowed. POS systems still have higher initial costs than PCCD, primarily driven by initial capital acquisition and installation labor costs (see Table 2 and Figure 1). However, POS' immediate lower operating costs quickly overcame those initial deployment cost differences and within the first full year of operation, POS total cost of operations becomes lower than that of PCCD.

After three years in operation, the efficiency of the POS operating cost model creates a TCO that is 30% lower than that of PCCD. At the five-year mark, the longer asset utilization of POS systems creates a 31% cost advantage as many retailers using PCCD are forced into upgrades or replacements of their aging systems.

TABLE 2

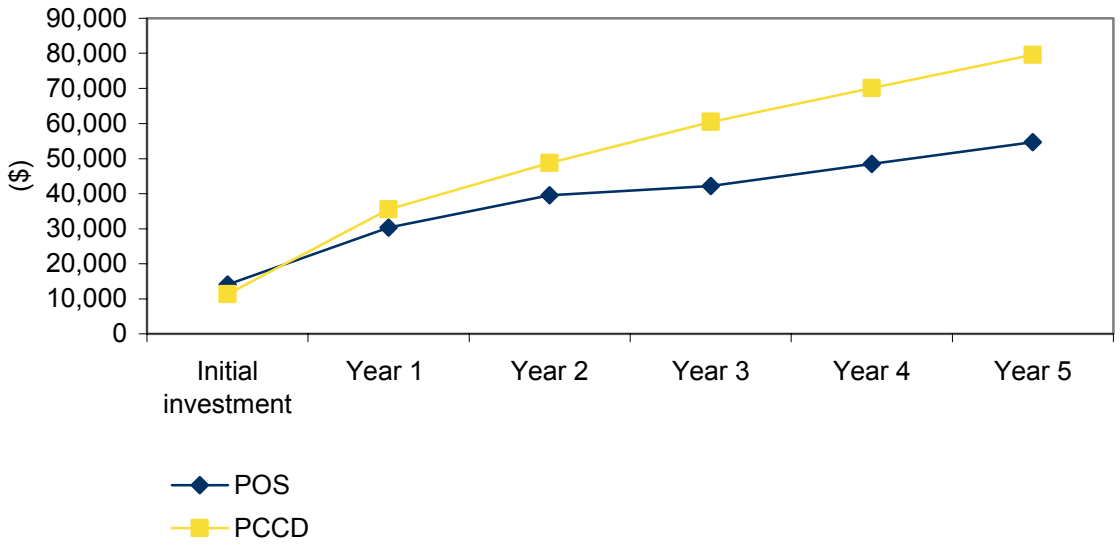
Total Costs per Checkout System ($)

	Initial		Year 3		Year 5	
Cost Area	POS	PCCD	POS	PCCD	POS	PCCD
Software	355	741	380	836	395	996
System plus peripherals	2,549	2,240	3,839	5,128	3,754	3,851
Staffing	11,196	8,311	38,012	54,520	50,623	74,776
Total	14,100	11,292	42,231	60,484	54,772	79,623

Source: IDC, 2006

FIGURE 1

Total Costs per Checkout System



Source: IDC, 2006

The Role of Initial Acquisition in POS Costs Versus PCCD Costs

As noted previously, capital purchase and staffing costs associated with system deployments favor PCCD systems. The average difference in initial acquisition and deployment costs per unit between POS and PCCD is $2,808 in favor of PCCD. By year three, PCCD total costs per unit exceed POS by $18,253, and by year five, the average difference in total costs between POS and PCCD reaches $24,851 per unit in favor of POS. If we look at the data another way, we note that PCCD average total cost of ownership is 31% more than POS after five years of useful life. If we assume a discount rate of 12% (the standard discount rate used in IDC and Global Retail Insights models) and apply this rate to the average savings of POS over PCCD for each year over five years, we calculate a net present value of $21,869 in savings.

Retailer advantages from the lower total ownership costs of POS are amplified significantly when the per-terminal benefits are extended to a chainwide store technology rollout.

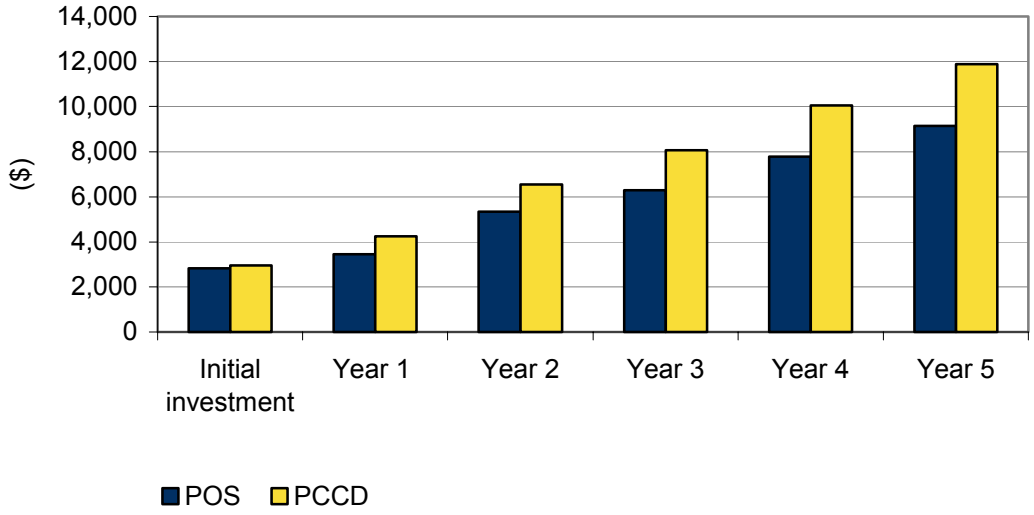
To better understand the differences between these two solutions, we break down the individual costs that are involved: system, software and peripherals, staffing, and other costs.

Understanding Ongoing System Costs

Figure 2 shows that the initial costs of buying checkout systems slightly favor POS (5%). However, the figure also shows that when all ongoing operational costs for checkout systems are taken into account, POS is consistently more cost-effective than PCCD over time (average 23% lower costs annually).

FIGURE 2

System Hardware Costs per Checkout System



Source: IDC, 2006

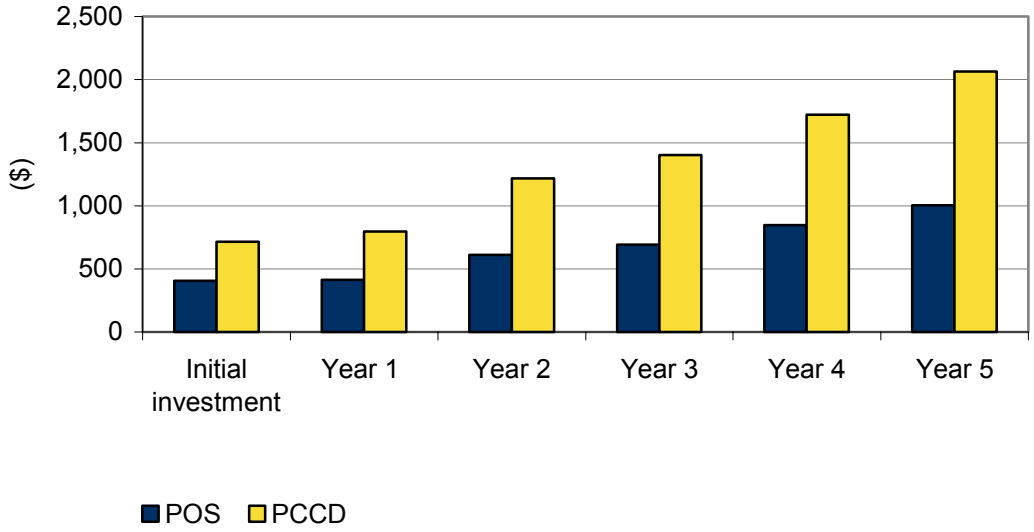
The Effect of Recurring Checkout Software and Peripherals Costs

In Global Retail Insights' opinion, investments in supporting checkout software and system peripherals are as important in the investment consideration as the initial base system costs. New POS software applications have shorter development cycles than hardware platforms. Additionally, with PCCD, applications need to integrate store back-office applications and enterprise applications that will likely be upgraded more frequently than POS system hardware. Peripherals also tend to have shorter refresh cycles than POS system hardware because of heavy use and new developments. Retailers evaluating their options need to consider when they plan to upgrade software and peripherals and determine which POS system best supports their needs while keeping costs to a minimum.

As Figure 3 shows, the research supports POS over PCCD in terms of ongoing peripherals and additional software costs. Regardless of the geographical variations, annual operating costs for software and peripherals for POS are over half the costs for PCCD, partly because PCCD requires far higher levels of software maintenance and peripheral upgrading.

FIGURE 3

Peripheral and Software Costs per Checkout System



Source: IDC, 2006

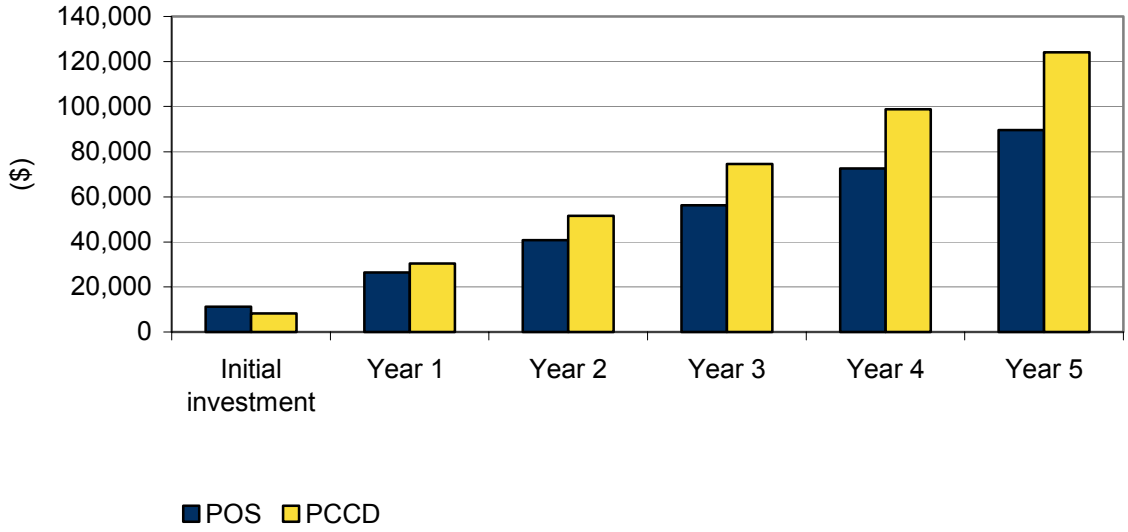
Optimizing Checkout Speed and Cashier Efficiency

It is impossible to review the differences between the two systems without looking at staffing costs. When included in the total cost of each system per unit, staffing costs make up the largest portion of total costs by far (70–90%). The results of the research show that even though more time is needed to install and deploy POS and to train the staff that will use it, the total cost difference between POS and PCCD still favors POS (see Figure 4). According to the responses in retailer interviews, POS solutions have much faster transaction throughput and cashier efficiency rates, thus requiring fewer labor hours in the front end even within the first year. The higher throughput of POS compared with that of PCCD also means higher sales per labor hour, further offsetting POS training costs.

POS also enables better information management and data access as well as more reliable inventory processing and SKU identification. All of these benefits improve productivity in the store environment and result in a more informed relationship between merchants and their customers. Such advantages, along with shorter checkout times and increased transaction throughput, are especially important for retailers in segments with high staff turnover rates (e.g., mass merchandise or convenience).

FIGURE 4

Staffing Costs per Checkout System



Source: IDC, 2006

Business Benefits

POS Systems Help to Enhance the Customer Experience

Shorter lines and speedy service are major assessment considerations for retailers installing either system. There are obvious benefits in terms of the number of potential customers served, which can result in driving higher sales volume. Although the information is influenced by average store size, it is evident that POS delivers faster throughput and thus reduces the amount of time customers spend in checkout lines.

Whether the store is small or large or the retailer is independent or part of a large chain, shoppers will spend less time in line when POS is installed. Efficient customer service is as important to a small retail convenience store as it is to a big box specialty retailer, which sees sharp volume peaks during the day. With fast checkout an important criterion for nearly every shopper, the ability for a retailer to deliver efficient service will help to drive increased frequency, bigger transaction sizes, and enhanced customer loyalty.

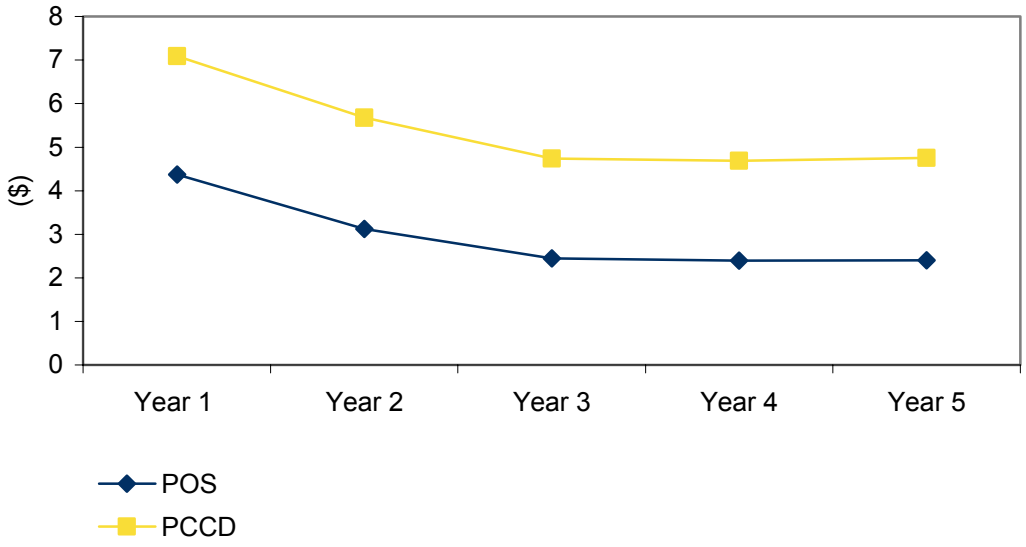
Another indirect benefit of lower front-end labor hours from POS-driven higher cashier efficiency is the ability for store management to reallocate that labor investment to parts of the store where associates can better directly service the needs of the shopper. The flexibility that companies realize as a result of using POS technology helps keep operating costs low and is a key indication of how specific in-store technology can have a dramatic impact on customers' shopping experiences.

Asset Utilization Is Better with POS Systems

To retailers interviewed, efficient service is fundamental to the choice of technology. Global Retail Insights' model also looked at the ownership costs per customer served on each system. As Figure 5 shows, the clear winner on this measure is POS. This cost delta is due partly to the more efficient customer service achieved with POS, as evidenced by the interview responses. Put in actual numbers, the average total PCCD system cost per customer served is between 38% and 48% greater than that of POS. Rapid and efficient checkout service has clear shopper satisfaction benefits, and it is just as crucial for retailers that are trying to get the most out of their store IT investments. After initial capital investment, the key driver is lower, keeping the ongoing cost of serving each consumer and each purchase transaction low. On this measure, the TCO model and research clearly demonstrate that reducing operating costs per customer favors POS.

FIGURE 5

Costs per Customer Served



Source: IDC, 2006

Retailers interviewed also commented that POS had improved their overall operating efficiency beyond just cashier throughput and transaction rates. These retailers stated that their POS systems extended beyond traditional store operations boundaries to support decentralized systems management efforts, aligning these efforts and data acquisition requirements with a company's core business intelligence needs. The system's ability to link up through both local and wide area networks allows the streamlining of sales, ordering, and inventory workflows and provides a quick, flexible response to new or store-specific business opportunities. It also allows for intelligent inventory management, making the flow of merchandise more efficient and therefore more profitable.

Retailers tend to get longer periods of useful life for POS solutions, even in retail operations where both PCCD and POS solutions are used (see Table 3). When the lifetime is spread across a chain of stores, the dollar effect of the longer lifetime for POS is widened. The research model confirms that POS consistently delivers benefits for up to 70% longer than PCCD.

TABLE 3

Key Performance Metrics

	POS	PCCD	Cost Impact
Flow rate (customers per hour)	20.47	14.20	Over five years, POS costs per system will be over 31% less than PCCD costs per system, but POS costs per customer will be 44% less than PCCD costs per customer.
System life span (years)	8.17	4.57	POS system costs will be 30% less than PCCD system costs at three years and over 31% less at five years.
Downtime (hours per year)	0.71	0.84	Downtime increases annual staffing costs per system by $273 for POS and $581 for PCCD.

Source: IDC, 2006

CONCLUSION

As retailers seek to optimize their store IT infrastructure to support their business execution and competitive positioning goals, their focus is on both customer satisfaction and bottom-line results. Global Retail Insights' analysis of POS and PCCD systems in traditional retail store environments reveals clear and compelling advantages for POS over PCCD, most notably in lower overall costs and improved customer service. We conclude the following from our analysis:

- The TCO model verifies that POS is the lower-cost option between evaluated checkout system choices, despite the initial acquisition cost differences, even within the first year of operation.
- The full extent of the advantages associated with POS becomes more clear when the expanded picture of all checkout-related operational costs is taken into account, as validated by interview responses by retailers.
- There is a widening gap between the average annual operating costs for POS against PCCD when spread over the five-year average useful life (refer back to Figure 1). This means that the cost advantage for POS is greater the longer the system is in operational use.
- POS provides the potential for top-line sales benefits as well. By reducing downtime, accelerating customer throughput, and increasing cashier efficiency, POS can improve overall customer satisfaction and drive bigger transaction sizes and more frequency from an increasingly satisfied (and expanding) loyal customer base.

This combination of differentiated store experience, customer satisfaction, and lower lifetime operating costs is what ultimately drives retailer financial performance. These evaluation criteria have become even more important in 2008 as retailers face a plethora of economic challenges and overall declining consumer confidence. The importance of these measures has been identified by many of the interviewed retailers as fundamental to their ultimate decision to deploy and operate POS solutions over PCCD systems.

METHODOLOGY

This Global Retail Insights white paper has been developed through a process of in-depth interviews with IBM POS customers and IBM PC hardware customers who had deployed PCCD solutions. The data from the interviews, coupled with IDC and Global Retail Insights TCO modeling and analysis, provides a five-year view of the total costs of ownership of POS and PCCD solutions in typical retail checkout environments.