Total Cost of Ownership for POS and PC Cash Drawer Solutions: A Comparative Analysis of Retail Check-out Environments

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Introduction

Productivity and return on investment (ROI) remain the two key challenges facing management in the retail industry today, challenges that are further highlighted by the recent global economic downturn.

Since the mid-1990s, this sector has seen some impressive changes in the use of technology to enhance profit, with cash register tapes, PC cash drawer (PCCD) solutions, and electronic point of sale (POS) providing invaluable data. This technology provides business intelligence that helps retailers to streamline ordering costs and meet the demands of their customers.

But the retail sector remains a highly competitive and cost sensitive area of industry, where even the smallest shifts in the flow of profit can result in a major competitive advantage. This means that the costs and benefits of the POS devices must be clearly delineated in order to aid retailers when their decisions on spending are being made.

In the light of recent global trends, the leading IT market research and advisory firm, IDC, conducted a series of interviews with retailers in the United States and Europe. This research focused on users of IBM's PCCD and POS solutions, with a view to setting out the implications of investment in either option. The aim was to define for retailers the total cost of ownership (TCO) along with the functional benefits involved in using these systems.

TCO Analysis

A TCO analysis was conducted to gain deeper understanding of the costs related to the purchase of PCCD and electronic POS check-out systems. IDC used a model based on the experiences of users of IBM's products over a five-year lifetime of use in the US and Europe. Using this data, extrapolations were made for the 6th and 7th years. The research covered 52,837 POS and PCCD terminals from different retail operations, further details of which can be seen in Table 1.

When comparing the two systems, the model matched costs against the benefits businesses received. The main challenges a retailer faces when deciding to buy check-out systems are understanding total costs; customer satisfaction; and reliability of performance in a 24X7 environment. In this context, the main challenges a retailer faces when deciding to buy check-out systems are:

- Understanding total costs, so that budgets can be planned and justified.

- Customer satisfaction. Every technological investment should support the customers' shopping experience, without harming normal operations. The standard requirement now is that the investment should raise customer satisfaction and improve normal operations.

- Reliability of performance in a 24X7 environment, enabling the greatest revenue retention obtained during and, particularly, outside normal operating hours.

Further details relating to the study are tabulated below:

Table 1 Respondent Profile				
Parameters	**Results**			
	US		**Europe**	
Retail Segment:	**POS**	**PCCD**	**POS**	**PCCD**
Specialty: Apparel, electronics, home improvement	50%	70%	43%	88%
Food service, hospitality-restaurants	27%	0%	17%	12%
Grocery	8%	0%	20%	0%
Other	15%	30%	20%	0%
Average Customers Served per Unit per Hour	25.8	19.4	18.6	14.2
Average Number of Units Per respondent	1,024	864	1,395	53
Employees	**POS**		**PCCD**	
<100	8%		14%	
100–499	17%		60%	
500–999	33%		13%	
1000 +	42%		13%	
Revenues ($M)	**POS**		**PCCD**	
<$10	12%		17%	
$10-$49	11%		17%	
$50-$99	33%		33%	
$100 +	44%		33%	
Number of Locations	**POS**		**PCCD**	
1	5%		12%	
2–100	32%		50%	
101–500	37%		25%	
500+	26%		13%	

Source: IDC, 2002

Total Costs

The standard perception in the retail environment, according to those surveyed, is that PCCD is not only cheaper to buy initially, but it also offers cheaper operating costs than POS. However, as can clearly be seen in Figure 1 the TCO model reveals that in reality **PCCD is more costly** than POS to run, even within the first year of use.

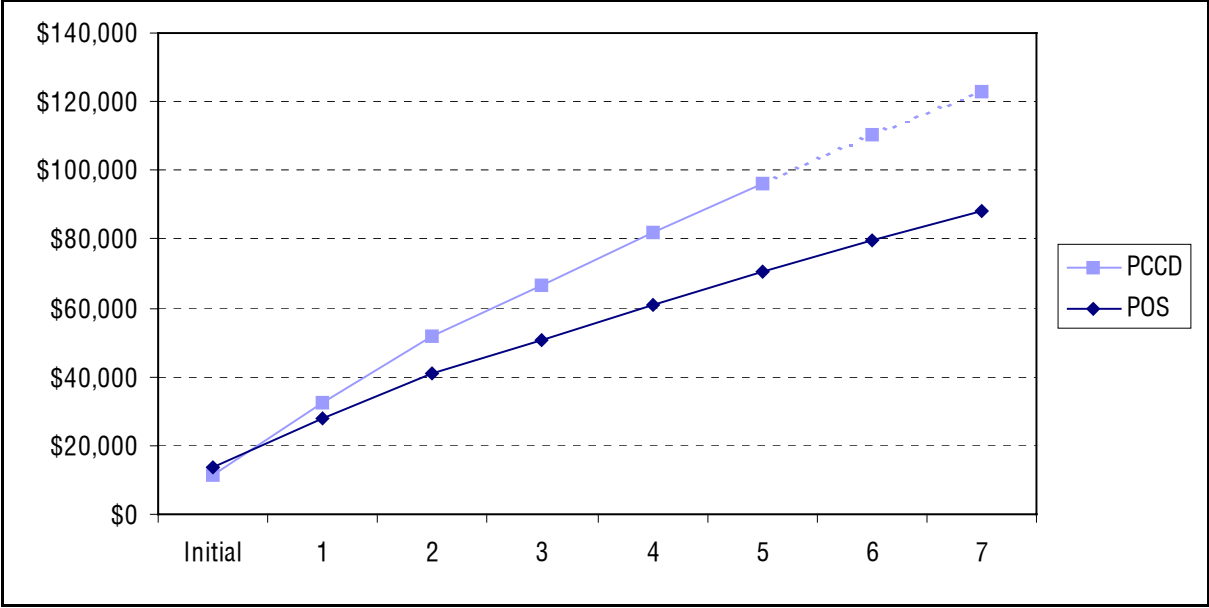| Table 2 Summary of Total Cost per System | | | | | | |
|---|---|---|---|---|---|
| | **1 Year** | | **3 Year** | | **5 Year** | |
| | **POS** | **PCCD** | **POS** | **PCCD** | **POS** | **PCCD*** |
| System costs** | $2,788 | $3,985 | $3,668 | $5,811 | $4,229 | $7,107 |
| Software and peripherals costs | $333 | $755 | $333 | $873 | $362 | $1,167 |
| Staffing costs | $26,157 | $30,656 | $46,678 | $59,939 | $64,869 | $86,600 |
| **Total costs** | **$29,217** | **$35,397** | **$50,678** | **$66,622** | **$69,460** | **$94,875** |

Key Assumptions:

Note: * The research has highlighted that PCCD is typically in use for no more than five years.

Note: ** System costs include annual upgrades, maintenance and initial software.

Source: IDC, 2002

The overall savings are multiplied many times over when we account for the fact that buying check-out solutions often involves equipment for many stores as part of a chain.

As some of the graphics that follow in the White Paper show, POS is not just cheaper to run over three years. It is also less expensive to run every single year, beginning in the first year of ownership. Put simply, the longer that POS is in operation, the greater the cost savings compared with PCCD. This can clearly be seen in Figure 1

As some of the graphics that follow in this White Paper show, POS is not just cheaper to run over three years. It is also cheaper to run every single year, beginning with the first year of ownership.

Figure 1
Total Costs per Check-out System

Note: The research has highlighted that PCCD is typically in use for no more than five years.
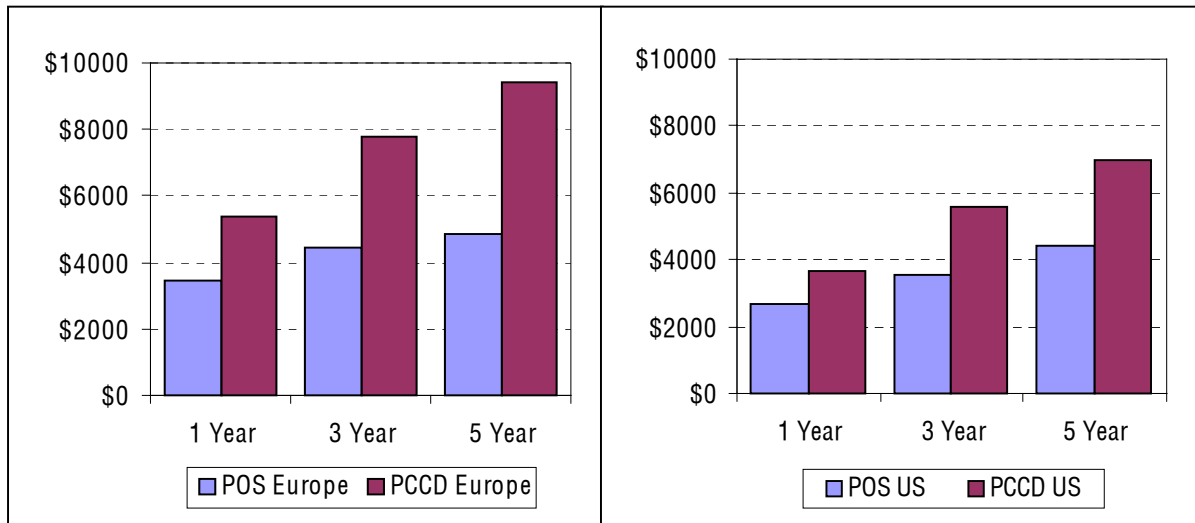Source: IDC, 2002

Analysis of Costs

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

System Costs are Important to Consider in Their Totality

When ongoing costs are taken into account, it becomes clear that POS is consistently more cost effective over the course of time.

Figure 1 shows that the initial costs of buying check-out systems does favor PCCD. However, as the figure also shows, when ongoing costs are taken into account, it becomes clear that POS is consistently more cost effective over the course of time.

Figure 2
System Hardware Cost per Check-out System

- Costs include annual upgrades, maintenance and initial software.
- POS system includes processor, hard disk drive, non-touch screen, printer, cash drawer, operating system, and hand held scanner.
- PCCD system includes hard disk drive, non-touch screen, card(s) to attach peripherals, printer, cash drawer, operating system and hand held scanner, although these were not necessarily all IBM products.
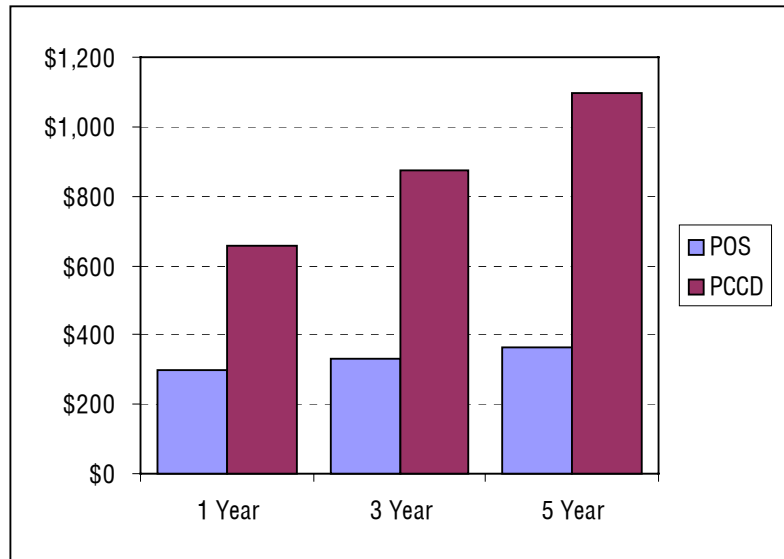
Source: IDC, 2002

Software and Peripherals Costs are Also Ongoing

In IDC's opinion, investment in supporting software and peripherals for any check-out system are as important to consider as the initial costs. As can be seen in Figure 3, 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 lower than for PCCD.

Regardless of the geographical variations, annual operating costs for software and peripherals for POS are lower than for PCCD, partly because PCCD requires far higher levels of maintenance and upgrade.

Figure 3
Peripheral and Software Cost per Check-out System

Note: Includes peripherals and software upgrades not included in the original bundled system package.
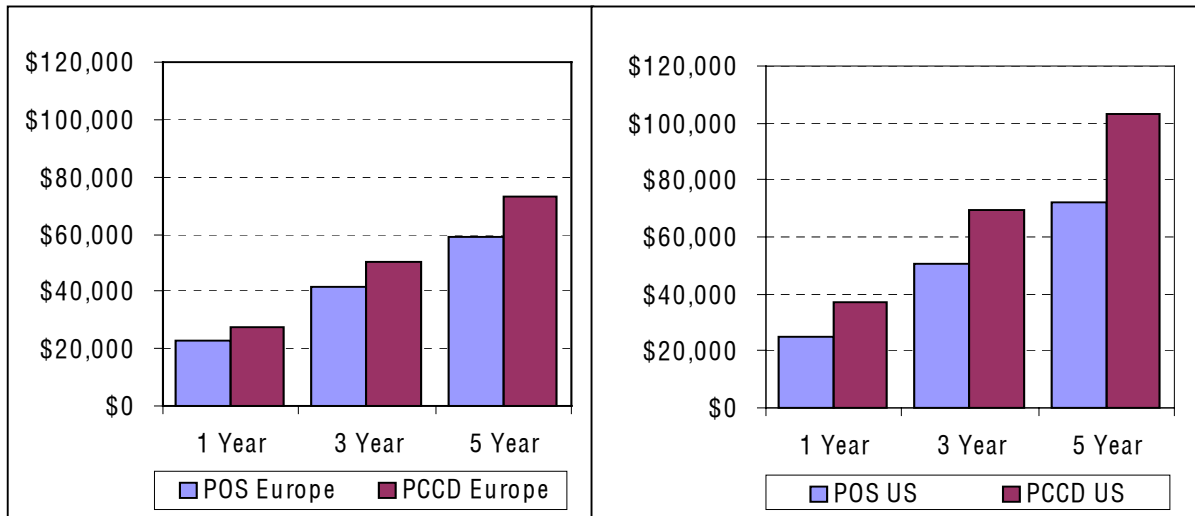Source: IDC, 2002

Staffing Costs Should Not be Ignored

The results of the research show that, even though more time is needed to install and launch the more sophisticated POS, and to train the staff that will use it, the total cost difference between POS and PCCD still favors POS.

It is impossible to review the differences between the two systems without looking at staffing costs. The results of the research show that, even though more time is needed to install and launch the more sophisticated POS, and to train the staff that will use it, the total cost difference between POS and PCCD still favors POS. According to the responses to the survey, this is because POS has a faster rate of serving customers and, therefore, requires fewer total staff hours, even within the first year.

POS also delivers other benefits; better information management, more reliable stock processing and product identification. All of these improve productivity in the retail environment and result in a more efficient relationship with customers.

Figure 4
Staffing Cost per Check-out System

Note: Includes training, launch, lost productivity due to downtime and costs in excess of two operational full time employees per system.
Source: IDC, 2002

Benefits

POS Systems Enhance Customer Service

Although the information is influenced by store size, it is evident that POS delivers faster service and so reduces the amount of time spent by customers in check-out lines.

Short lines and speedy service are a major consideration for retailers when installing either of these systems. There are obvious benefits in terms of the number of customers served, which results in an increase in profits. Although the information is influenced by store size, it is evident that POS delivers faster service and so reduces the amount of time spent by customers in check-out lines Respondents to the survey were especially clear on this, as the following direct respondent quotes demonstrate:

> "We've definitely improved business efficiency and customer service, as now we can control the products a lot more…"

> "Definitely faster check-outs, we've found them not only to be faster, but more efficient with the information availability…"

In practice this means that whether the store is small, large or part of a chain, the customers will spend less time in line when POS is installed.

In practice this means that whether the store is small, large or part of a chain, the customers will spend less time in line when POS is installed. This is as important to a small retail convenience store as it is to a specialty retailer, which sees sharp peaks during the day. Obviously, the less time the customer has to wait for check-out, the more likely they are to return.

Another benefit is that store managers are able to reassign employees to other shop floor customer service duties, such as answering queries. This fosters customer loyalty and keeps costs low, and is one key aspect in how the choice of the technology can have a dramatic impact on the customers' shopping experience, without being seen as an unnecessary gimmick.

Asset Utilization is Better with POS Systems

To retailers interviewed, efficient service is fundamental to the choice of technology. IDC's model also looked at the cost per customer served on each system. The clear winner on this measure is POS as can be seen in Table 3 below.

Table 3 Costs Per Customer Served				
	Europe		US	
	POS	PCCD	POS	PCCD
3 year	$3.0	$4.7	$2.4	$4.4
5 year	$2.8	$4.6	$2.4	$4.4

Source: IDC, 2002

This significant cost difference is partly due to the quicker customer service achieved with POS. Put in dollar terms, the total PCCD system cost per customer is between 57% and 83% greater than for POS.
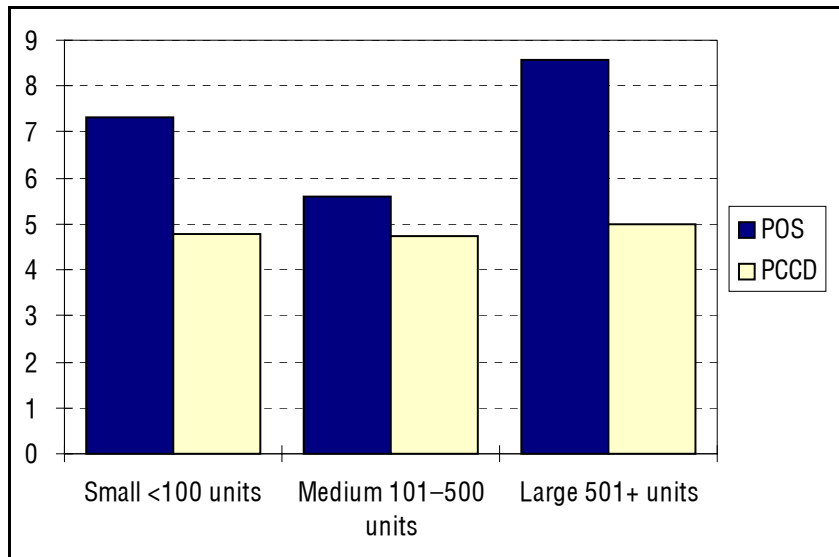
This significant cost difference is partly due to the quicker customer service achieved with POS, as evidenced by the responses of customers to the survey. Put in dollar terms, the total PCCD system cost per customer served is between 57% and 83% greater than for POS. While there are evident benefits to the customer in being served quickly, it is just as crucial for retailers who are trying to get the most out of their IT investment. Having spent the money, retailers will want to keep operating costs low, whatever the customer base. On this measure, the TCO model and research clearly demonstrate that reducing cost per customer favors POS.

Retailers interviewed also commented that overall operating efficiency is also improved with POS. According to customer responses, the software used for the POS system extends beyond traditional systems management boundaries to simplify the complexity of systems management efforts, aligning these efforts with the company's core business processes. The fact that the system can link up through both local and wide areas allows the streamlining of ordering and a quick, flexible response to new or localized retail opportunities. It also allows for intelligent use of stock storage, making the flow of products more efficient and therefore more profitable. Again, this improves customer satisfaction as can be seen in the responses of the interviewees, who highlighted that the decision to adopt POS over PCCD was taken because of:

"Faster check-out and internal department performance improvement…"

"Just-in-time stock deliveries…"

Figure 5
Lifespan of Solutions (Years)

Note: The research has highlighted that PCCD is typically in use for no more than five years.
Note: System's lifetime for hardware and peripherals defined as 'until chassis is replaced.'
Note: System's lifetime for software defined as 'until major upgrade is required.'
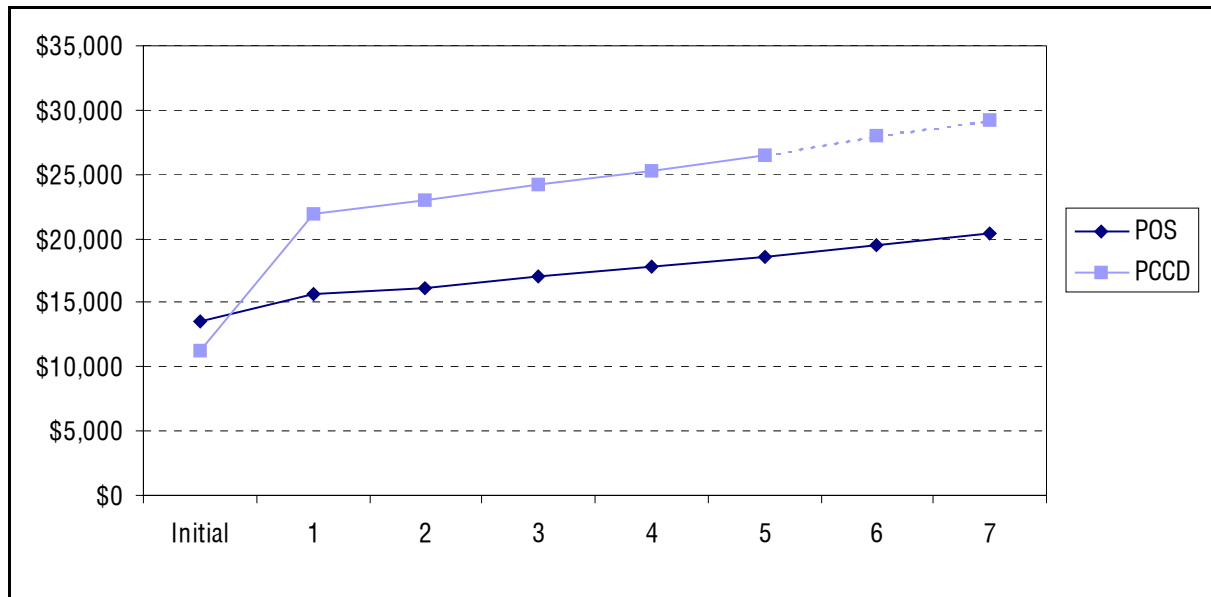Source: IDC, 2002

The IBM POS solution has a longer lifetime than PCCD, bearing in mind some geographical differences. 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.

Conclusion

IDC's analysis of POS and PCCD in retail environments reveals clear and compelling advantages, notably lower costs and improved customer service, for POS over PCCD. We conclude the following from our analysis:

1. Despite the initial price, the TCO model verifies that POS is the lower-cost option, even within the first year of operation.

2. The full extent of these advantages is obvious when the true costs of operation are taken into account, as validated by respondents to the survey from which the model was developed.

3. There is a widening gap between the costs for POS compared with PCCD over time, as can be seen in Figure 6 below. This means that the cost advantage for POS is greater the longer it is in use. Over the life of the systems, these cost differences have a major impact on the bottom line.

Figure 6
Annual Costs per Check-out System

Note: The research has highlighted that PCCD is typically in use for no more than five years.

Source: IDC, 2002

4. Benefits of the use of POS over PCCD are significant, the most tangible being better customer service, reliability of service, and longer system performance. This not only improves efficiency and fosters customer loyalty — it also means that POS offers a superior contribution to both the bottom and the top lines. These are financial measures that every retailer appreciates, both in challenging market conditions and during good times.

5 Features have also been identified by some respondents as fundamental to their decision to invest in POS over PCCD.

So, the choice to use POS means that retail managers can improve customer service and manage their supply chains more efficiently. All of this occurs in an environment of scalability, and at a lower cost per unit over the lifetime than offered by PCCD.

Methodology

This IDC White Paper has been developed through a process of in-depth interviews with a number of IBM Business Partners and executives, a quantitative survey of end user organizations coupled with TCO modeling and analysis.

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