



CASE STUDY
**Cutting the Costs of Cash:
Automating Cash Management
at the Cincinnati Zoo**

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Cincinnati Zoo embraces cash automation to reduce costs, streamline cash processes and heighten security.

Executive summary

One of the oldest and most respected zoos in the U.S., The Cincinnati Zoo and Botanical Garden is a busy park that handles a great deal of cash every day. For decades, this cash has been processed by hand — costly, labor-intensive work that leaves room for error and loss. So in 2009, zoo officials opted for a more modern, efficient approach to cash management: cash automation.

Working with technology consultants Post Browning, the zoo enlisted Arca, a cash automation solution provider, to design and implement a system tailored to the zoo's needs. Since the solution was installed in May 2009, the zoo has been able to significantly trim operating costs, cash operation staffing and cash-in-transit deliveries. The zoo also operates with less on-hand cash and enjoys accurate, real-time reporting and end-of-day balancing.

More importantly, the Arca solution restored accountability in cash handling, reducing shortages and improving cash operations within all departments of the zoo and with armored carriers and banking partners.

With these changes, the zoo has raised the performance, attitudes and expectations of zoo associates involved with cash movement at the park.

Situation

The Cincinnati Zoo's approach to cash management was dramatically different before it automated its handling processes.

Staffing

The zoo's limited cash operations staff was overburdened with tedious end-of-day balancing and daily deposit preparation, as well as menial but necessary sorting, facing and strapping. To alleviate some of the pressure on the cash operations group, the zoo's guest services staff were often called on to verify, count and reconcile till returns at the end of each shift.

Efficiency

Prior to automation, cash personnel were responsible for receiving and verifying daily cash orders, generating start funds, collecting and counting down sweeps, counting and verifying totals and deposits, verifying the daily bank and generating reports — so much work for one day that some of it needed to be completed the prior evening. In addition, the zoo's cashiers conducted note exchanges via pneumatic tubes. Since cash room personnel were often unavailable or unable to respond quickly, a request could sit unanswered for up to 20 minutes, stalling a sale and frustrating both cashier and customer.

Lack of Accountability

Cash was managed manually at the zoo. Staff were required to perform numerous daily exchanges including cash orders, cashier transactions, management cash movements and deposit preparation. As cash changed hands, the custodial chain grew, and accountability became more difficult to establish. Unable to isolate or control these exchanges, the zoo could not pinpoint custodial problems or determine the sources of error or loss.

Security-shrink

Without a formal process for tracking cash loss, cash operations staff would simply compare POS statements to balance statements. The statements could differ by as much as \$200 in a day and loss was nearly untraceable. The zoo also lacked a way to keep track of tills and officials had no way to know if a cash attendant forgot to turn in a cash pouch.

Security problems extended to the cash room. While many zoo personnel entered the cash room every day, cash supervisors were often too absorbed in their work to monitor visitors' activities. Stacks of cash and coin were exposed on tables, and vault doors were frequently left open, sometimes for long periods, to provide ready access for note changes.

Accuracy

Cash counting is repetitive, non-stimulating and laborious, making the chance of human error high. It was difficult to precisely measure the effect of errors, but zoo officials found they occurred often enough to slow and create inefficiencies in the entire cash process.

Cost and Fees

Manual cash handling affords little insight into the overall process — it can be difficult to know how much cash is at a location at any given time. To ensure it had enough cash to operate, the zoo called for frequent armored car deliveries and was charged for each transport. While zoo officials had negotiated a low rate with the carrier, they wanted to further reduce fees by cutting back on cash-in-transit services.

Solution

To meet the park's cash demands, zoo officials elected in 2009 to automate cash management. They enlisted technology consultant Post Browning, which recommended the zoo implement the Arca Retail Cash Solution.

The Arca solution consists of a cash recycler, a secure side vault and sophisticated retail cash management software.

Cash Recycling and Bulk Cash Depository

The Arca8000D, Arca's cash recycler with secure side vault, handles all the functions of a cash room: counting, sorting, verification, storage, counterfeit detection and denomination changing.

Each day's revenue is electronically tracked and recorded during each transaction, providing an accurate cash position at all times, and end-of-day balancing happens in real time as cashiers return tills. Large notes are collected throughout the day via sweeps and are then deposited and tracked. The unique bulk depository vault accepts bank deposits and excess change funds that have been transferred from the cash recycler. Management may initiate an automated process or a daily rollover process for cash proceeds to be sent to the depository vault.

Software

The Arca software includes two functional areas: one for users (cashiers) and one for managers. Users can generate individual start funds, exchange cash, return tills and perform end-of-day activities via an intuitive touch-screen menu. Each function is performed without a cash supervisor or manual counting.

Managers have access to all cashier functions. They can also register users, establish unique access authority, load cash and perform verification, perform cash management functions, provide end-of-day totals and settle daily deposits.

The system records in detail all transactions for each user, allowing management to generate accurate audit reports.

The Arca software can accept data or imported files for coin amounts, checks, coupons and other types of transactions, merging this data into the final tally.

Security

The Arca Retail Cash Solution uses an integrated biometric palm scanner from Fujitsu to read the pattern of a user's hand and confirm his or her identity. Once the palm scan is complete, the software activates a simple touch-screen menu that displays only the functions that user is allowed to perform.

The Arca solution is packaged in a UL-291, Level 1 safe rated for overnight security — the same level of security required for ATMs in the U.S. Arca products can be connected to any common alarm system with additional security options (including electronic locks, seismic detectors, dual-control and more).

Reporting

Report generation is simple, automatic and performed in real time. Configured to meet customer requirements, reports are produced via the management portion of the software solution and can be accessed remotely over a network. Reports are generated using traditional bookkeeping functions for cash management and are broken down by location, machine, user, day or date, time of day, type of transaction, denomination and other factors to meet the individual needs of the retailer.

The Results

To truly gauge the effectiveness of cash automation at their park, zoo officials conducted pre- and post-implementation audits. Officials found that the Arca Retail Cash Solution restored accountability while reducing labor, cash requirements and fees.

Reduced Labor

- Cash management staffing has been reduced by nearly **43 percent**. Prior to automation, cash management tasks required the equivalent of seven full-time employees. After automation, that has been reduced to the equivalent of four full-time employees.
- The time required for end-of-day deposit preparation has been reduced by **78 percent**. Deposit prep now lasts 45 minutes (down from 3.5 hours).
- The time required for start-till generation has been cut by more than **77 percent**. Creating tills now takes 10 minutes (down from 45 minutes).
- Return-till deposit has become **66 percent** faster. Time required for deposit has gone from 6.75 hours per day to just 2.25 hours per day.
- The average end-of-day cash merge time has fallen by **71 percent** — from 3.5 hours per day to one hour per day.
- A mid-shift sweep is now **83 percent** shorter, reduced from 36 minutes to six minutes.
- Change orders can be prepared **85 percent** faster — in just three minutes rather than the 20 minutes previously required.

Reduced Cash Requirements

- The average safe balance has shrunk **80 percent**, from \$25,000 to \$5,000.
- Daily on-hand cash been reduced by nearly **16 percent** and continues to trend downward.

Reduced Fees

- Cash-in-transit deliveries have been reduced by **66 percent**.

Restored Accountability

- Shrink has been reduced by more than **98 percent** to a mere 0.028 percent of bank.
- An incomplete audit trail process has been replaced with a detailed report containing all cash-in and cash-out transactions, broken down by individual, location and other critical detail.
- Management reports are created in real time and can be distributed via LAN or network.
- Employees are happier. Staffers report they are more relaxed and less hurried. They have also confirmed the new technology has made their work lives better and safer.

Automation in Action

Before the Cincinnati Zoo automated cash management, operations were expensive, too many people handled cash, differences were difficult to isolate, and the process lacked accountability.

This lack of accountability hampered operations at all levels, internally and with external financial partners. Balancing and reporting were both difficult and unreliable, and the zoo had to order and hold more cash than necessary. “With accountability in question, every aspect of our operation was affected, and pressure mounted when differences occurred,” said Raymond Ulrich, director of purchasing and cash operations for the zoo.

The key to more efficient cash management was the Arca Retail Cash Solution. “Arca made our operations efficient and, perhaps more importantly, restored cash accountability. With accountability established, everything fell into place,” said Ulrich. “Costs went down, we were able to cut back our on-hand cash, and we required fewer change order deliveries, which reduced armored carrier fees. Funds are always secure, and with no one to blame for differences, our staff is free to focus on other challenges.”

Measurable Results: Before/After Cash Automation

Key:

- Before (Manual)
- After (Automated)

Charts represent verified data collected from timing studies and volume counts for typical mid-week day, 2009.

