THE IMPACT OF CASH RECYCLING ON BRANCH OPERATIONS

May 3, 2014
EXECUTIVE SUMMARY

This report is based on the analysis of daily vault buy and vault sell data from 10 bank and credit union branches.

OBSERVATIONS/FINDINGS:

Banks and credit unions provide a high level of service to their members. Branches can be quite busy and a complex mix of transactions is usually present, both at teller windows and drive up windows. The challenge of efficiently controlling the significant cash inventories and transactional cash flow using existing staffing models is normally cited by branch staff as the primary opportunity for improvement.

Branches implemented a number of strategies for minimizing the number of dual-control processes in use, but analysis shows that the use of teller cash recyclers (TCRs) either as a vault, or on the teller line replacing cash drawers, will:

- dramatically improve the level of control and security of branch cash,
- lower the total cash inventories in branches,
- eliminate significant amounts of wasted non-value work by tellers,
- increase the transactional throughput of each teller position,
- and allow Branch Managers and Head Tellers to perform higher value work by eliminating many of the custodial dual control activities they perform every day.

By automating the deposit, validation, denominational sorting, storage and dispensing of cash with a cash recycler, significant savings in both time and money can be realized. The table below shows a summary of the hard savings and is explained in detail throughout the full version of this report.
# SAVINGS MATRIX

<table>
<thead>
<tr>
<th>Operation</th>
<th>Teller (per year)</th>
<th>Head Teller (per year)</th>
<th>Branch Mgr (per year)</th>
<th>Drawer Limit</th>
<th>Cash Reduction in Branch</th>
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</thead>
<tbody>
<tr>
<td><strong>VAULT</strong></td>
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<tr>
<td>Reduction Of Drawer Limits Possible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$3,000.00</td>
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<tr>
<td>Teller Buys / Sells</td>
<td>300.3 hrs per teller</td>
<td>135 hrs</td>
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<tr>
<td>Teller Time Counting And Moving Cash Between Drawers</td>
<td>69 hrs per teller</td>
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<tr>
<td>End Of Day Balancing And Sell</td>
<td>45.9 hrs per teller</td>
<td>14 hrs</td>
<td></td>
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<tr>
<td>Reduction Of Closed Time For Each Teller Window</td>
<td>92.0 hrs per teller</td>
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<tr>
<td>Reduction Of Branch Cash Levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30.00%</td>
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<tr>
<td>Atm Deposit Processing</td>
<td>55 hrs</td>
<td>55 hrs</td>
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<tr>
<td>Audit</td>
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<tr>
<td><strong>TELLER LINE</strong></td>
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<tr>
<td>Reduction Of Excess Cash In Branch</td>
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<td></td>
<td></td>
<td></td>
<td>$5,000.00</td>
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<tr>
<td>Teller Buys/ Sells</td>
<td>344.5 hrs per teller</td>
<td>135 hrs</td>
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<td>End Of Day Balancing And Sell</td>
<td>114.8 hrs per teller</td>
<td>14 hrs</td>
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<td>Out Of Balance End Of Day</td>
<td>19 hrs per branch</td>
<td>18 hrs per branch</td>
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<td>Teller Station Changes</td>
<td>55.1 hrs per branch</td>
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<tr>
<td>Atm Deposit Processing</td>
<td>55 hrs</td>
<td>55 hrs</td>
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<tr>
<td>Elimination Of Tcd Loading Procedures</td>
<td>24 hrs per TCD</td>
<td>24 hrs per TCD</td>
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<tr>
<td>Tcd Audit Elimination</td>
<td>6 hrs per TCD</td>
<td>6 hrs per TCD</td>
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<tr>
<td>Reduction Of Main Vault Audit</td>
<td></td>
<td></td>
<td></td>
<td>6.5 hrs</td>
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<tr>
<td>Reduction Of 30% Auditing Main Vault</td>
<td>4.8 hrs</td>
<td>4.8 hrs</td>
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<tr>
<td>Cross Selling/ Referrals</td>
<td>55 referrals per year</td>
<td></td>
<td></td>
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<tr>
<td>Elimination Of Cash Bags In Main Vault</td>
<td>23</td>
<td>23</td>
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</table>
CONCLUSIONS

CURRENT STATE
Tellers at both the drive-up window and at the main teller counter provide an exceptionally high level of service to members. There are many opportunities for product and service referrals, but the current staffing model and cash-control processes often requires members to wait in lines and tellers to spend a large portion of their time counting cash in front of members. Many of the transactions conducted at the teller window could be completed online if tellers had time to train members (i.e. balance inquiries, check reconciliation, simple account transfers).

AREAS OF IMPROVEMENT
The branches we visited were extremely busy and had a constant line of members waiting to be served. Transactional velocity is an issue when members are waiting. Many of the transactions that take the longest have little value for the bank. Cross-selling is difficult due to the need to make transactions more efficient.

OPPORTUNITIES — VAULT
Tellers would spend less time counting, verifying, buying and selling cash. They would not be strapping, sorting and verifying cash. Instead, that time could be spent with an open teller window serving members.

Tellers would be able to increase the accuracy and efficiency of all large cash transactions by having access to the recycler for immediate automated verification.

OPPORTUNITIES — TELLER LINE
The use of teller cash recyclers on the teller line would give tellers significantly more time to engage members (during the time a teller would normally be counting cash).

Cross-selling, referral and member-education by tellers could significantly increase revenue and lower branch traffic for low-value transactions.
CONCLUSIONS CONTINUED

ROI CALCULATION — VAULT
Reduction of closed time for each teller window. Estimated improvement:
(20 mins. per day) x (# of tellers) which will increase customer throughput
and lower the cost of each transaction.

\[
\text{20 mins / teller / day}
\]
\[
\text{86.7 hrs / teller / year}
\]

Reduction of counting and sorting for large transactions would further
reduce the closed time for each window.

ROI CALCULATION — TELLER LINE
Soft benefit: Cross-selling/Referrals – It is conservative to assume that the
use of the CM18 recycler, either as a vault or on the teller line, will free the
teller to refer at least one additional member each day:

(# of tellers) x (1 additional referral per week) x (value of 1 referral)

\[
\text{1 referral / teller / week}
\]
\[
\text{52 referrals / teller / year}
\]
PROCESS FLOW: GENERAL CASH FLOW IN THE BRANCH

Armored Carrier
Branch receives cash once/week from the armored carrier.

Vault Room
Cash is delivered to the vault room where it is counted in dual control by reserve bank custodians.

Main Vault
All cash is placed into the vault except the delivery day’s operations amount, which is placed into the main (operating vault). Cash receiving process takes 15 - 20 mins. in dual control.

ATM
ATMs are emptied of deposited cash every day in dual control.

Vault Buys & Sells
All vault buys and sells are from/to the main (vault), including beginning of day, end of day and periodic sells.

Vault Sells
From the main vault, cash is distributed regularly via teller buys.

TCD & ATM Cash Flow
TCD and ATM cash is removed from the reserve vault just prior to loading and placed into the main (operating) vault. (See processes for TCD and ATM servicing)
We provide technology and services to help people control cash in bank branches, retail stores and self-service kiosks. Since the company began in 1998, ARCA has experienced strong, consistent growth and now has operations in the United States, the United Kingdom, Russia, India and China.