



March 31, 2008

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SUBJECT: Application Controls Review of the Electronic
Verification System (Report Number CRR-AR-08-003)

This report presents the results of our audit of application controls over the Postal Service's Electronic Verification System (eVS) (Project 07RG006IS000). The Postal Accountability and Enhancement Act of 2006 (the Postal Act of 2006) requires the U.S. Postal Service Office of Inspector General (OIG) to audit data collection systems and procedures the Postal Service uses in their ratemaking process. We initiated this audit in response to those requirements. See [Appendix A](#) for additional information about this audit.

Conclusion

The Postal Service has made advances in strengthening application controls in the eVS, periodically implements new rate case requirements, and improves systems functionality and controls on an incremental basis. However, we identified data input validation and sampling and reconciliation procedures the agency could strengthen to further protect mailing revenues, attract additional customers to the eVS, and preserve customer goodwill and the Postal Service brand. We will report preservation of customer goodwill and the Postal Service brand as non-monetary impacts in our *Semiannual Report to Congress*.

Data Input Validation

Incomplete data validation rules allow mailings that do not meet criteria for destination entry discounts to be processed through the eVS. The Product Tracking System (PTS), which initially receives the electronic manifest file from the mailer, treats certain error conditions as warnings, allowing the records to be processed instead of being rejected for correction and retransmission. Incorrect edit processing can lead to erroneous postage calculations and additional expense to deliver the mail, resulting in loss of revenue. See [Appendix B](#) for additional information about data input validation issues.

We recommended the Vice President, Customer Service, direct the Manager, Marketing Technology and Channel Management, to:

1. Reevaluate all warning messages in the Product Tracking System to determine whether they impact the postage calculation.
2. Strengthen the edit rules in the Product Tracking System to enforce the requirements for destination entry discounts.

Comprehensive Sampling Procedures

The Postal Service needs to strengthen sampling and verification procedures at mail receiving facilities. Guidelines allow sampling data to be captured for a mailer at any time during a 7-day period in either one or several sessions. Additionally, management discontinued sampling conducted by business mail entry personnel at destination delivery units and began relying on sampling conducted by Statistical Programs personnel. However, these personnel are not onsite every day at these facilities. Finally, there are no established procedures to address delinquent sampling.¹ The potential for non-uniform sampling at acceptance facilities creates opportunities for mailers to ship mailpieces that do not qualify for destination entry discount rates. See [Appendix B](#) for additional information about sampling issues.

We recommended the Vice President, Customer Service, direct the Manager, Marketing Technology and Channel Management, to:

3. Develop and implement formal procedures for sampling of Electronic Verification System packages at all appropriate postal units, including destination delivery units.
4. Track and monitor delinquent sampling to determine the adequacy and timeliness of sampling of mailings.

Reconciliation Procedures

Business mailers we interviewed could not reconcile monthly billings from the Postal Service to the electronic manifests they submit to the agency for the same period. Existing summaries, error reports, and postage statements did not provide sufficient detail for mailers to ascertain postal billings. The inability to reconcile billing statements could prevent customers from adopting the eVS for their mailing needs and impact customer goodwill and the Postal Service brand. See [Appendix B](#) for additional information about reconciliation procedures.

¹ When mail arrives at a scheduled entry facility but no test data is collected, the test is considered delinquent.

We recommended the Vice President, Customer Service, direct the Manager, Marketing Technology and Channel Management, to:

5. Develop and implement a monthly reconciliation report that allows business customers to validate postal billings.

Commingling of Test and Production Transactions

Data transmitted by a pilot mailer during parallel testing was commingled with production data in the eVS database. The Postal Service uses data entered from hard copy manifests submitted by this mailer for billing purposes and uses data transmitted electronically into the database for testing purposes. The existing procedures do not clearly distinguish data used for parallel testing from production data. The Postal Service did not implement a separate testing environment to support mailers during the pilot phase. Combining test data with production data could result in billing errors and impact the integrity of data used in corporate decision making. See [Appendix B](#) for additional information about commingling test and production transactions.

We recommended the Vice President, Customer Service, direct the Manager, Marketing Technology and Channel Management, to:

6. Delineate parallel data used for pilot testing from production data as an interim solution.
7. Work with Information Technology to establish a separate test environment to support pilot mailers.

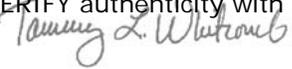
Management's Comments

Management agreed with our findings and recommendations and will implement corrective actions for recommendations 1 through 6 by September 30, 2009. Management also agreed with the intent of recommendation 7, but stated they did not have the resources to fully implement a separate test environment. Management also agreed to the non-monetary impacts identified in this audit. Management's comments, in their entirety, are included in [Appendix C](#).

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations in the report. The OIG considers recommendations 1, 2, 3, and 5 significant, and therefore requires OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. These recommendations should not be closed in the follow-up tracking system until the OIG provides written confirmation the recommendations can be closed.

We appreciate the cooperation and courtesies provided by your staff during the audit. If you have any questions or need additional information, please contact Paul Kuennen, Director, Cost, Revenue and Rates, or me at (703) 248-2100.

E-Signed by Tammy Whitcomb 
VERIFY authenticity with Approve!


Tammy L. Whitcomb
Deputy Assistant Inspector General
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Attachments

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APPENDIX A: ADDITIONAL INFORMATION

BACKGROUND

The eVS, a component of the *PostalOne!* system, allows high-volume package mailers to use electronic manifest forms instead of paper documents to document and pay postage and special service fees. The eVS is designed to make it easy for high-volume package mailers to take advantage of destination entry rates. Mailers prepare manifest files in electronic format for transmission to the Postal Service through the Internet, while mail packages are delivered at destination entry postal facilities.

The PTS, an existing system used for delivery confirmation and signature confirmation services, initially receives the electronic manifest the mailer transmits. The PTS performs a series of data edits based on edit rules implemented in the system. As part of the edit and validation process, the PTS generates a Confirmation, Error, and Warning file. This file contains information about valid records accepted for processing, records that do not meet all criteria but are nevertheless accepted and forwarded for further processing with a warning message, and records that are rejected for error conditions. The PTS validates 130 standard error and warning conditions, producing warning or error messages depending on the condition of data records in the manifest file. For all mail classes and categories, the PTS validates a combined total of 1,394 potential warning and error conditions. Of this total, 572 are error conditions resulting in records being rejected for subsequent correction and resubmission. There are 822 warnings where the records are forwarded for further processing by the eVS system, although the records may not meet all processing criteria to qualify for destination entry discounts.

The Postal Service collects sampling data at destination mail facilities such as destination bulk mail centers, destination auxiliary service facilities, destination sectional center facilities, and destination delivery units. Postal clerks at receiving facilities examine sample packages to determine the accuracy of mail preparation and postage. The *Electronic Verification System Intelligent Mail Device User Guide*, version 1.3, dated May 2007, gives detailed sampling procedures. According to the guide, business mail entry personnel at receiving facilities should randomly sample at least 100 pieces of eVS mail in each 7-day period for each mailer. The sampling data is uploaded in the eVS, which compares the data against the manifest files to determine the accuracy of postage calculation and to identify unmanifested mail.

The eVS calculates postage payments and adjustments for unmanifested and misshipped mail. The eVS also calculates adjustments for discrepancies identified during sampling and produces error reports showing calculations for unmanifested and misshipped mail and sampling adjustments.

The Postal Service electronically deducts postage for the mailings from mailers' *PostalOne!* postage payment accounts. Mailers can review online statements to see the results of postage samplings. Mailers can also monitor the quality of their mail, take

preventive measures to ensure discrepancies do not recur, and avoid future postage adjustments.

Currently, nine customers use the production system and one customer uses the system as a pilot. In fiscal year (FY) 2007, these mailers delivered 84 million mailpieces totaling \$112 million in revenue.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to evaluate the effectiveness of application controls over the eVS. To accomplish our objective, we reviewed system documentation and architecture and interviewed the portfolio manager and system owner. We studied the data file structure of the electronic manifest file, assessed the transaction flows within the system, and evaluated existing controls. We assessed processing logic for manifest processing, sample reconciliation, and processing of unmanifested mail. We visited a business mail entry unit, observed eVS mail acceptance and sampling, and interviewed personnel. We conducted site visits to two eVS customers and obtained feedback and information about their file preparation and quality control procedures. We analyzed edit rules implemented in the system; electronic data files submitted by eVS mailers; and Confirmation, Error, and Warning reports produced by the system. We compared data records from input files to output produced by the eVS for the same records. For selected customers, we evaluated error report generation and transmission at various stages, error correction, and reconciliation efforts.

We conducted this performance audit from April 2007 through March 2008 in accordance with generally accepted government auditing standards and included tests of internal controls as we considered necessary under the circumstances. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We discussed our observations and conclusions with management officials on March 4, 2008, and included their comments where appropriate.

We used manual and automated processes to assess the reliability of computer-generated data used for our analysis and we concluded that the data were sufficiently reliable to support the audit objective.

PRIOR AUDIT COVERAGE

The OIG issued a report titled *Security Review of the Electronic Verification System* (Report Number CRR-AR-08-002) on February 12, 2008. The report cited weaknesses both in the primary external file transfer method the Postal Service uses to receive electronic manifests from major mailers and in user authentication. Management agreed with two recommendations to strengthen file transport security and has initiatives in progress, completed, or planned addressing the issue. Management did

not agree with two other recommendations to strengthen user authentication and stated they would accept the risk associated with the existing user access controls.

APPENDIX B: DETAILED ANALYSIS

Overall Application Controls

The Postal Service has made advances in strengthening application controls in the eVS. The Postal Service periodically implements new rate case requirements and improves systems functionality and controls on an incremental basis.

The Postal Service can further strengthen input validation routines and mail acceptance guidance and procedures to ensure that mailings qualify for the discounts they receive. Development of input reconciliation reports could assist mailers in transitioning to the eVS. Finally, separating parallel test data from production data would assist in preserving the integrity of data used in postal ratemaking.

Because management gave implementing recent rate case requirements a higher priority, they could not devote resources to implementing all the required controls in a timely manner. Strengthening data input validation, developing comprehensive sampling guidance and procedures, improving reconciliation procedures, and separating parallel test data from production data could further protect mailing revenue, attract additional customers to the eVS, and preserve customer goodwill and the Postal Service brand.

Data Input Validation

Incomplete data validation rules allow mailings that do not meet criteria² for eVS destination entry rates to be processed through the eVS. The PTS, which initially receives the electronic manifest file from the mailer, treats certain error conditions as warnings, allowing the records to be processed instead of rejecting them for subsequent correction and retransmission. This occurs because the edit rules implemented in the PTS are meant for validating mail for delivery and signature confirmation purposes and not for eVS destination rate validation. Best practices call for performing routine data verifications or edit checks as close to the point of origin as possible. Incorrect edit processing can result in erroneous postage calculations and additional expense to deliver the mail, resulting in loss of revenue. Strengthening input controls could preserve customer goodwill and protect the Postal Service brand.

We analyzed approximately 48,000 records a major mailer submitted through the eVS and that found more than 3 percent of records contained warnings and were forwarded to the eVS for further processing.³ These warnings included invalid destination Zip Codes™, destination rate indicators that did not match entry facilities, and destination

² Publication 205, *Electronic Verification System Business and Technical Guide*, Appendix F, dated August 16, 2007, gives the requirements for preparing destination entry mail.

³ During the 12 months ended November 30, 2007, this mailer submitted 6.6 million records totaling \$10.6 million in postage.

Zip Codes outside the service area of the delivery unit. These warnings could result in incorrect postage as follows:

- The data file format requires a valid Zip Code in the detail record of the data file. The PTS validates the Zip Code with the Address Management System. If the Zip Code is invalid, the PTS replaces it with zeros and generates a warning message. However, without a valid Zip Code, mail processing and delivery will require manual intervention by a mail processing clerk, causing an additional processing expense that is not considered in destination entry discounts.
- Different discount rates apply to destination facilities – bulk mail centers, delivery units, and sectional center facilities – which all have different destination rate indicators. In some locations, these acceptance facilities with different destination rate indicators share the same Zip Code. However, the system is able to validate only one acceptance facility type/destination rate indicator pairing for each Zip Code. Mailings for all other facility type/destination rate pairings for that Zip Code receive a warning message and the mail is processed. Since the mailing is not rejected, the mailer could be claiming a larger discount than they are entitled to claim.
- When eVS mail packages are delivered at a mail acceptance facility which does not service the destination areas, the Postal Service should charge the mailer extra postage for misshipment of mailpieces. Our analysis showed that records that generated this error were not assessed misshipment charges. Management informed us they took action and corrected this issue in their software release on December 16, 2007. However, because our testing was complete, we were unable to validate this.

Reevaluating warning conditions to ensure that all conditions that can result in incorrect postage are reclassified as errors will necessitate that the mailer correct and retransmit the records. This could increase the accuracy of postage paid. Updating the eVS file format to include additional Zip Codes to correctly designate acceptance facilities that share the same Zip Code will also help to ensure accurate postage.

Comprehensive Sampling Procedures

Because of inadequate sampling procedures at mail receiving facilities, not all mail packages had an equal probability of being selected for sampling. High-volume mailers delivered mail packages on a daily basis to receiving facilities. The guidelines for sampling allowed the Postal Service to capture sampling data for a mailer at any time during a 7-day period, either in one session or in several sessions, as long as at least 100 pieces were included in the sample. Marketing established the threshold of at least 100 pieces for sample size because it believed sampling 100 pieces would provide the necessary coverage to determine the accuracy of eVS mailings. The procedures allowed receiving personnel to complete the sampling requirement for a mailer by examining at least 100 mailpieces from a single delivery on a single day rather than

sampling mailpieces from deliveries for each day during the 7-day period. This could prevent the Postal Service from finding a mailer to have inconsistent mail packaging during the remainder of the 7-day period. The potential for a mailer to exploit this situation is high, since a mailer can track the sampling trend and plan the mailings to include packages that do not qualify for eVS destination entry rates.

In March 2005, the Postal Service discontinued sampling conducted at destination delivery units by business mail entry personnel and started relying on the sampling conducted by Statistical Programs personnel, who sample eVS packages for ratemaking-related estimations. However, their verifications cover only a small portion of eVS shipping because they sample destination delivery units only when those facilities appear in their sample selection and only when the data collection personnel actually visit those facilities. Therefore, sampling that Statistical Programs personnel conduct may not provide sufficient coverage to ensure the accuracy of eVS mailings at destination delivery units.

According to the *Electronic Verification System Intelligent Mail Device User Guide*, when the mail arrives at a scheduled destination entry facility but no test data is collected, the test is considered delinquent. According to the guide, management should contact the district office when the number of delinquent tests reaches an unacceptable level and a national eVS coordinator should track all delinquent tests. However, established procedures do not address delinquent sampling or recording delinquent tests. The eVS Program Manager told us that no one at the district office level tracked delinquent tests and management had not designated an eVS coordinator to track the delinquent tests on a nationwide basis.

Sampling eVS packages is the primary method for ensuring compliance by mailers in packaging their mail. Sampling procedures that uniformly cover all shipments and all acceptance facilities will ensure the Postal Service will be able to collect all revenues. Management informed us that they are developing more detailed sampling procedures.

Reconciliation Procedures

Business mailers we interviewed cannot reconcile monthly billings from the Postal Service to the electronic manifests they submit to the agency for the same period. Because implementing rate case requirements takes a higher priority, the Postal Service did not devote sufficient resources to develop an adequate reconciliation solution. Best practices require system outputs to be balanced to relevant control totals and transactions failing edit and validation routines should be subject to appropriate follow-up until errors are corrected. However, existing summaries, error reports, and postage statements do not provide sufficient detail for mailers to evaluate and reconcile postal billings, hampering effective use of the eVS.

Mailers we interviewed are often unable to reconcile 1) the postage they calculate on manifests for a period (for example, 1 month) to the amounts actually charged by the Postal Service on the same manifests and 2) total mailpieces they sent for a period to

the total amount charged by the Postal Service during the same period. These mailers need to reconcile this data for their own internal control purposes, such as meeting requirements of the Sarbanes-Oxley Act of 2002. One mailer informed us that the inability to reconcile their mailing data remains as a significant deficiency in their internal control structure. Another mailer using the eVS on a pilot basis stated they are reluctant to adopt eVS for all of their mailings because of their inability to reconcile their mailing data to Postal Service billings.

To assist mailers in reconciling their data, the eVS provides several online reports as well as the ability to download mail and billing data. However, factors such as adjustments and timing differences make the reconciliation process difficult. Potential factors that would hinder mailers from reconciling their balances to the Postal Service's include:

- Records the PTS rejects.
- Records the eVS rejects.
- Postal Service adjustments for differences identified during sampling.
- Postal Service adjustments for misshipped items.
- Postage Adjustment Factor the Postal Service charges.
- End-of-month shipments the Postal Service receives but for which they have not received manifests.
- Mail and manifest received during the last days of the current month, but with incomplete processing in the current month.
- Mail and manifest received during the last days of the previous month but processed and billed in the current month, including postage, sampling adjustments, and adjustments for misshipped items.
- Permit fees charged during the current month.

Developing a reconciliation solution based on a model that takes into account all potential reconciling items and providing the ability for customers to run automated reconciliation reports could enable mailers to correctly reconcile their data. This will promote customer goodwill, convince more mailers to use the system, and preserve the Postal Service brand.

Commingling of Test and Production Transactions

We determined that data a mailer transmits during parallel testing was commingled with production data in the eVS database. The Postal Service did not implement a separate testing environment to support mailers during the pilot phase. The mailer using the eVS as a pilot sends packages through the eVS to determine its suitability for their long-term business needs. The Postal Service uses data entered from hard copy manifests this mailer submits for billing purposes, while data transmitted electronically into the database is used for testing purposes. However, the existing procedures do not clearly distinguish data used for parallel testing from production data.

Best practices call for management to store test data separately from production data. Combining test data with production data could result in billing errors or impact the integrity of data used in corporate decision making. Management informed us they have implemented a separate test environment for internal customer acceptance testing and plan to implement a certification environment for business mailers. They further stated they would establish procedures to demarcate parallel test data sent electronically into the production database from data entered from hard copy manifests used for billing purposes. Management has also initiated a hardware upgrade that would add additional capabilities and strengthen controls over test and production data.

APPENDIX C: MANAGEMENT'S COMMENTS

SUSAN M. PLONKEY
VICE PRESIDENT, CUSTOMER SERVICE



March 27, 2008

Mr. Johnson John
Acting Director, Audit Operations
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SUBJECT: Transmittal of Draft Audit Report – Application Controls Review of the Electronic Verification System (Report Number CRR-AR-08-DRAFT)

Thank you for the opportunity to review and comment on the subject draft audit report. Overall we agree with the accuracy of the findings. Marketing Technology & Channel Management (MTCM) believes that with the changes addressed below, there will not be adverse impact to customer goodwill and the Postal Service brand.

Recommendation 1:

Re-evaluate all warning messages in the Product Tracking System (PTS) to determine whether they impact the postage calculation.

Response

MTCM agrees that warning messages need to be re-evaluated. eVS and PTS have already made some enhancements to the edit process in the March 2008 release. Additional enhancements are under review. The review will be completed by Qtr 4 FY2008. Any new requirements identified by the review will be incorporated by Qtr 4 FY2009.

When the Zip Code is invalid and PTS replaces the Zip Code with 00000, currently eVS uses the manifest postage. MTCM agrees that the discount should not be offered and is writing requirements to have these pieces calculated at a single-piece rate. These requirements will be incorporated by Qtr 2 FY2009.

The system is only able to validate one acceptance type/destination rate indicator pairing for each Zip Code. MTCM agrees this is an issue and is writing requirements to have this corrected. These requirements will be incorporated by Qtr 2 FY2009.

The issue of eVS not assessing misshipment charges accurately was corrected in the December 16, 2007 software release.

Recommendation 2:

Strengthen the edit rules in the Product Tracking System to enforce the requirements for destination entry discounts.

Response

MTCM agrees and is working with PTS to develop requirements to strengthen the edit rules for destination entry discounts. This will be achieved with a new file structure that supports the

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definition of presort and containerization to validate presort and destination entry discounts. This is projected to be deployed in Qtr 3 FY2009.

Recommendation 3:

Develop and implement formal procedures for sampling of Electronic Verification System packages at all appropriate postal units, including destination delivery units.

Response

MTCM agrees that sampling procedures need to be re-enforced. MTCM is working with Statistical Programs to ensure that we have a statistically valid sampling approach leveraging both the BMEU personnel and Statistical program samplers.

MTCM will re-enforce the sampling procedures and implement these by Qtr 1 FY2009.

Recommendation 4:

Track and monitor delinquent sampling to determine the adequacy and timeliness of sampling of mailings.

Response

MTCM agrees. MTCM will develop a process to ensure that the sampling procedures as defined in response #3 are adhered to. This process will roll out in Qtr 1 FY2009.

Recommendation 5:

Develop and implement a monthly reconciliation report that allows business customers to validate postal billings.

Response

MTCM agrees, and PostalOne! release 17.0 scheduled for deployment in Qtr 4 FY2008 will provide end-to-end reconciliation for customers.

Recommendation 6:

Delineate parallel data used for pilot testing from production data as an interim solution.

Response

MTCM agrees that there is a potential that data from parallel testing could be inadvertently included in corporate decision making processes if ad hoc reporting is not carefully performed. MTCM is working with Information Technology to flag data to delineate parallel data from data used in the actual billings, which will simplify ad hoc reporting and preserve the integrity of corporate decision making. This change is targeted for implementation in Qtr 1 FY2009.

MTCM disagrees that pilot testing in the production environment is an interim solution. It would be cost prohibitive to maintain the environment necessary to replicate the production parameters in the Customer Acceptance Test (CAT) environment. Parallel testing is the final step when bringing new mailers on and is only done for a limited time under close surveillance to prevent any billing inaccuracies.

Recommendation 7:

Work with Information Technology to establish a separate test environment to support pilot mailers.

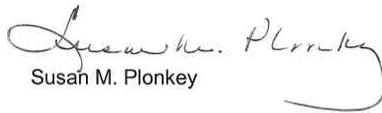
Response

MTCM agrees that most testing should be done in a separate test environment. A mailer is required to use the separate CAT environment prior to engaging in a parallel test.

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MTCM disagrees that the parallel test be run in a test environment. Only the final stage of the parallel test is conducted in the production environment. It would be cost prohibitive to maintain the environment necessary to replicate the production parameters in the CAT environment. As described in response #6, MTCM will flag data to delineate parallel data from data used in actual billings to ensure the integrity of the information generated during the parallel test.

We do not believe that this report contains any proprietary or business information and may be disclosed pursuant to the Freedom of Information Act.


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