



OFFICE OF INSPECTOR GENERAL

UNITED STATES POSTAL SERVICE

Delayed Mail Data in the Enterprise Data Warehouse

Management Advisory

Report Number
NO-MA-16-002

March 29, 2016

DELAY

Enterprise Data Warehouse
Network Operations Data Mart





OFFICE OF INSPECTOR GENERAL

UNITED STATES POSTAL SERVICE

Highlights

Delayed mail data in the EDW-NODM was incomplete. The Postal Service added two delayed Standard Mail data elements in August 2008, which the data transfer to the EDW-NODM did not reflect.

Background

This management advisory presents the results of our review of delayed mail data in the Enterprise Data Warehouse (EDW), which is a repository for U.S. Postal Service data. The Postal Service's Web Mail Condition Reporting System provides and transfers delayed mail data to the EDW Network Operations Data Mart (EDW-NODM).

The EDW-NODM is one of the tools management uses to document delayed mail. The Postal Service considers Standard Mail to be delayed when it is not processed, finalized, or dispatched from a specific operation to provide subsequent operations the designated time to ensure delivery by the programmed delivery day. Delayed mail can negatively impact customer service, service performance scores, and revenue.

The U.S. Postal Service Office of Inspector General (OIG) has a risk model that identifies delayed mail issues at processing facilities nationwide. In June 2015, while researching issues identified by our risk model, we determined that delayed mail data in the EDW-NODM did not match what was reported in the Web Mail Condition Reporting System. Further research determined this issue existed for 15 processing facilities in fiscal year 2015. Our objective was to assess the completeness of delayed mail data in the EDW-NODM.

What The OIG Found

Delayed mail data in the EDW-NODM was incomplete. The Postal Service added two delayed Standard Mail data elements in August 2008, which the data transfer to the EDW-NODM did not reflect. The data elements were added when the Web Mail Condition Reporting System was modified to reflect national color code policy changes. As a result, about 993 million delayed Standard Mail pieces were not reported in the EDW-NODM from August 2008 through December 2015 (or about 2.7 percent of total delayed Standard Mail pieces reported).

Accurate reporting of all delayed mail categories is essential to the Postal Service's monitoring and improvement process. During our review, the vice president, Network Operations, said the Postal Service primarily uses the Web Mail Condition Reporting System to monitor delayed mail, but agreed that EDW-NODM reporting should be accurate and the Postal Service would correct the problem. We are making a recommendation because management has not corrected the issue.

What The OIG Recommended

We recommended the vice president, Network Operations, coordinate with Information Technology to include two modified line items for delayed mail in the EDW-NODM.

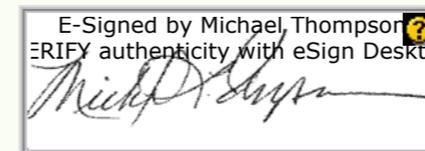
Transmittal Letter



OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

March 29, 2016

MEMORANDUM FOR: LINDA M. MALONE
VICE PRESIDENT, NETWORK OPERATIONS



FROM: Michael L. Thompson
Deputy Assistant Inspector General
for Mission Operations

SUBJECT: Management Advisory – Delayed Mail Data in the
Enterprise Data Warehouse
(Report Number NO-MA-16-002)

This management advisory presents the results of our review of Delayed Mail Data in the Enterprise Data Warehouse (Project Number 15XO004NO000). Our objective was to assess the completeness of the delayed mail data in the Enterprise Data Warehouse Network Operations Data Mart.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Margaret B. McDavid, director, Network Processing and Transportation, or me at 703-248-2100.

Attachment

cc: Corporate Audit Response and Management
Vice President, Enterprise Analytics
Manager, Enterprise Access Infrastructure

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Finding

Our objective was to assess the completeness of delayed mail data in the EDW-NODM.

Introduction

This management advisory presents the results of our review of delayed mail data in the Enterprise Data Warehouse (EDW), which is a repository for U.S. Postal Service data. The Postal Service's Web Mail Condition Reporting System (WebMCRS)¹ provides and transfers delayed mail data to the EDW Network Operations Data Mart (EDW-NODM).² The EDW-NODM is one of the tools management uses to document delayed mail. Our objective was to assess the completeness of delayed mail data in the EDW-NODM. See [Appendix A](#) for additional information about this review.

The Postal Service considers Standard Mail delayed when it is not processed, finalized, or dispatched from a specific operation to provide the subsequent operations the designated time to ensure delivery by the programmed delivery day. Delayed mail can negatively impact customer service and result in service performance score declines and loss of revenue, as noted in prior U.S. Postal Service Office of Inspector General (OIG) reports on delayed mail.³

The OIG has a risk model that identifies delayed mail issues at processing facilities nationwide. In June 2015, while researching issues identified by our risk model, we determined that delayed mail data in the EDW-NODM did not match what was reported in WebMCRS. Further research determined that this issue existed for 15 plants in fiscal year (FY) 2015.

Summary

Delayed mail data in the EDW-NODM was incomplete. The Postal Service added two delayed Standard Mail data elements in August 2008, which the data transfer to the EDW-NODM did not reflect. As a result, about 993 million delayed Standard Mail pieces were not reported in the EDW-NODM from August 2008 through December 2015 (or about 2.7 percent of total delayed Standard Mail pieces reported). Accurate reporting of all delayed mail categories is essential to the Postal Service's monitoring and improvement process. During the audit, the vice president, Network Operations, said the Postal Service primarily uses WebMCRS to monitor delayed mail, but agreed that EDW-NODM reporting should be accurate and management would correct the problem. We are making a recommendation because the Postal Service has not corrected the issue.

Incomplete Data Feeds

Delayed mail data in the EDW-NODM has been incomplete since August 2008, because the WebMCRS administrator modified the delayed mail line items Outgoing Mixed Processing Standard Letters Delayed Mail Flow⁴ and Outgoing Mixed Processing Standard Flats Delayed Mail Flow⁵ to reflect national color code policy⁶ changes, but the data transfer from the WebMCRS to the EDW-NODM did not reflect these changes.

1 An administrative reporting tool designed to monitor processing facility conditions.

2 A repository for managing data and enhancing operational reporting capabilities.

3 For example, see [Substantial Increase in Delayed Mail](#) (Report Number NO-MA-15-004, dated August 13, 2015).

4 All associated delayed mail flow volume related to the distribution of Standard letter mail trays originating from processing and distribution centers in the Network Distribution Center's designated service area. Delayed mail flow occurs when Standard Mail is not processed, finalized, or dispatched from a specific operation or facility in time to provide the subsequent operation or facility the time necessary to ensure delivery by the programmed delivery day. Delayed mail flow is specific to the type of color code applied and the distribution level of the mail reported. Delayed mail flow counts collected at the Dispatch of Value or Critical Entry Time will be input with the MCRS morning report.

5 All associated delayed mail flow volumes that have been extracted from flat tray operations identified for single piece automated mixed states distribution including loose faced mail.

6 All outgoing area distribution center or sectional center facility Standard Mail, regardless of where it is received (e.g., associate office, processing and distribution center, or other location) must be coded with the color that represents the day the mail is scheduled to be cleared.

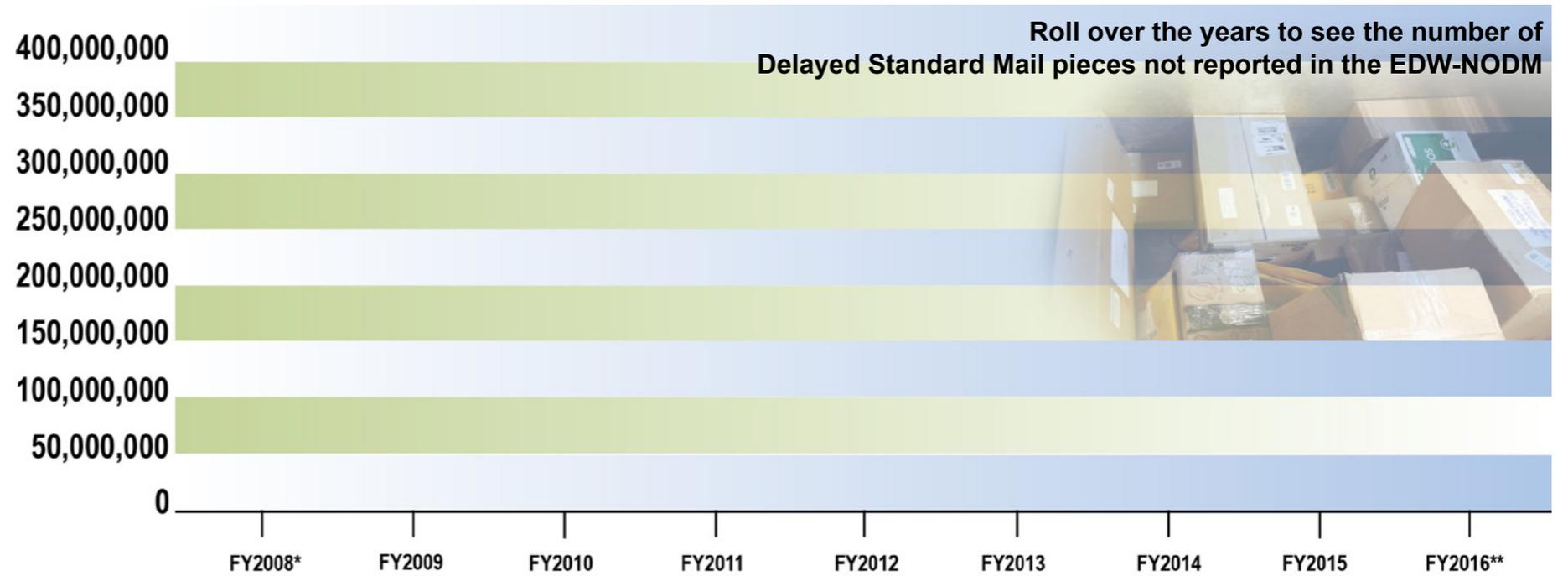
Network Operations personnel were generally not aware of incomplete data feeds from the WebMCRS to the EDW-NODM. They mainly use data from the WebMCRS and the ASR module to monitor delayed mail processing.

During the review, the vice president, Network Operations, said the Postal Service primarily uses WebMCRS to monitor delayed mail, but agreed that EDW-NODM reporting should be accurate and the Postal Service would correct the problem.

Network Operations personnel were generally not aware of incomplete data feeds from the WebMCRS to the EDW-NODM. They mainly use data from the WebMCRS and the Application System Reporting (ASR) module⁷ to monitor delayed mail processing. For example, the National Operations Center’s daily condition report is developed from data in the WebMCRS. To correct the incomplete data feed problem, Network Operations management must submit a Business Needs Statement request to Information Technology, which authorizes funding for the modification.

From August 2008 to December 2015, about 993 million delayed Standard Mail pieces were not reported in the EDW-NODM (or about 2.7 percent of total delayed Standard Mail pieces reported). See Figure 1. The problem affected delayed mail reporting in the EDW-NODM for 59 plants in FY 2008. In FY 2015, it affected delayed mail reporting for 15 plants.

Figure 1: Number of Delayed Outgoing Standard Mail pieces Not Reported in the EDW-NODM (August 2008-December 2015)



Source: Application System Reporting MCRS Monthly Reporting Module.
 * For the period August 1 to September 30, 2008.
 ** For the period October 1 to December 31, 2015.

Although Postal Service personnel have other tools to monitor delayed mail, we found that from August 2014 to October 2015, the WebMCRS data in the EDW-NODM was accessed 192,342 times. Further, we found that from September 2015 to January 2016, of 2,328 users accessing this data, 1,998 (or 86 percent) were Postal Service personnel and 330 (or 14 percent) were OIG personnel. During the review, the vice president, Network Operations, said the Postal Service primarily uses WebMCRS to monitor delayed mail, but agreed that EDW-NODM reporting should be accurate and the Postal Service would correct the problem. We are making a recommendation because management has not corrected the issue.

⁷ A module designed to mirror the actual reporting database.

Recommendation

We recommend management coordinate with Information Technology to include the two delayed Standard Mail data elements in the EDW-NODM by June 30, 2016.

We recommend the vice president, Network Operations:

1. Coordinate with Information Technology to include the two Web Mail Condition Reporting System delayed Standard Mail data elements in the Enterprise Data Warehouse Network Operations Data Mart by June 30, 2016.

Management's Comments

Management agreed with the finding and recommendation identified in the report, but disagreed with the calculation of the other impact.

Regarding the other impact, management stated that on a daily basis the Postal Service uses two other systems to monitor, track, and respond to delayed mail conditions.

Regarding recommendation 1, management agreed that accurate reporting of all delayed mail categories is essential to the Postal Service's monitoring and improvement process. Management also stated that they do not rely on EDW to make day-to-day decisions; however, they agreed that data sent to EDW should be complete and accurate.

Management expects to complete implementation of the recommendation by September 1, 2016.

See [Appendix B](#) for management's comments in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendation in the report and corrective actions should resolve the issues identified in the report. Although management stated that the EDW data was not used for operational purposes, our analyses of the data usage determined that 86 percent of the users identified were Postal Service personnel. Therefore, we maintain that our data integrity impact calculations are valid.

All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. Recommendation 1 should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendation can be closed.

Appendices

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Appendix A: Additional Information

Background

The Postal Service considers Standard Mail to be delayed when it is not processed, finalized, or dispatched from a specific operation to provide the subsequent operations the designated time to ensure delivery by the programmed delivery day. Delayed mail can negatively impact customer service. The OIG has a risk model that identifies delayed mail issues at processing facilities nationwide. In June 2015, while researching issues identified by our risk model, we determined that delayed mail data in the EDW-NODM did not match what was reported by a plant in the WebMCRS. Further research determined the problem affected delayed mail reporting in the EDW-NODM for 59 plants in FY 2008. In FY 2015, it affected delayed mail reporting for 15 plants.

The Postal Service established the WebMCRS in September 2002, as a repository for information related to facility conditions. It provides a standardized snapshot of plant conditions nationwide for analysis, forecasting, and planning; and acts as a single repository for data to be available organization-wide. The Postal Service established the original WebMCRS data feeds to the EDW-NODM in 2005, and has not significantly modified them since. The WebMCRS administrator can modify reporting line items as needed, but the EDW-NODM will not necessarily reflect those modifications. In November 2015, the manager, Supply Management Information Technology Portfolio, stated that no funds are allocated in the current budget for scheduled changes to the data feed from the WebMCRS to the EDW-NODM.

Objective, Scope, and Methodology

Our objective was to assess the completeness of delayed mail data in the EDW-NODM.

To accomplish our objective, we:

- Interviewed management and obtained their feedback.
- Reviewed data from the WebMCRS, EDW-NODM, and ASR MCRS Monthly Reporting Module.
- Reviewed relevant criteria and procedures for reporting system operations and system changes.
- Performed analyses to determine the impact of incomplete data feeds from the WebMCRS to the EDW-NODM.

We conducted this review from August 2015 through March 2016, in accordance with the Council of the Inspectors General on Integrity and Efficiency, *Quality Standards for Inspection and Evaluation*. We discussed our observations and conclusions with management on February 29, 2016, and included their comments where appropriate.

We assessed the reliability of the WebMCRS and EDW-NODM data by interviewing responsible Postal Service officials and by cross-checking the data between the reporting systems. We did not test the controls over these systems. We determined that the data were sufficiently reliable for the purposes of this report given the limitations of reliability noted in our review.

Prior Audit Coverage

Our earlier report titled *Substantial Increase in Delayed Mail* (Report Number NO-MA-15-004, dated August 13, 2015), noted an increase in delayed processing volumes of about 494 million mail pieces for the first 6 months after the Postal Service implemented service standard and network rationalization changes in January 2015. The delayed processing mail was caused by inclement weather from January through March 2015, and network and operational changes resulting from the network and service standard changes. We recommended the Postal Service monitor operations, assign and train appropriate personnel, assign appropriate transportation, and establish criteria to determine if performance would stabilize after future optimization changes. Management agreed to monitor operations, assign and train personnel and assign appropriate transportation. Management partially agreed to establish criteria and stated they do not agree that all other optimization efforts must cease. Management noted some optimization efforts, particularly at individual facilities, may be required to continue to meet customer or business requirements. Further, they noted that activities associated with the Phase II consolidation effort are the only activities deferred at this time.

Appendix B: Management's Comments

LINDA M. MALONE
VICE PRESIDENT, NETWORK OPERATIONS



March 21, 2016

LORI LAU DILLARD
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Draft Management Advisory – Delayed Mail Data in the Enterprise Data Warehouse (Report Number NO-MA-16-DRAFT)

Thank you for providing the Postal Service with the opportunity to review and comment on the subject draft Management Advisory. Management greatly appreciates the opportunity to provide feedback and collaborate during the development of the advisory to ensure the highest level of accuracy possible.

Management does not agree with any monetary impact. At all times, the identification and reporting of delayed mail for these line items took place in the correct system. On a daily basis, the Postal Service uses both the Web Mail Condition Reporting System (WebMCRS) and Application system Reporting (ASR) systems to monitor, track, and respond to delayed mail conditions throughout the processing network.

Accurate reporting of all delayed mail categories is essential to the Postal Service's monitoring and improvement process. Data transmitted to the EDW suffers from a time lag between reporting in WebMCRS and loading into EDW. For this reason, the Postal Service relies on the WebMCRS and ASR systems to provide the most current data.

Management agrees that, while not relied upon for day-to-day management, the data sent to EDW should be complete and accurate. It should be noted that the general time period for data available through the EDW interface is 3 years and as such, the vast majority of the volumes that were not reported would no longer be available in the system.

Network Operations management is currently working with the Information Technology group to develop the required process to ensure the flow of data between WebMCRS and EDW for the two mail condition reporting line items will take place.

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The recommendation in this draft report is addressed below.

We recommend the vice president, Network Operations:

Recommendation 1:

Coordinate with Information Technology to include the two Web Mail Condition Reporting System delayed Standard Mail data elements in the Enterprise Data Warehouse Network Operations Data Mart by June 30, 2016.

Management Response / Action Plan:

Management agrees with this recommendation. Network Operations Management will coordinate with Information Technology to include the two Web Mail Condition Reporting System delayed Standard Mail data elements, Outgoing Mixed Processing Standard Letters Delayed Mail Flow and Outgoing Mixed Processing Standard Flats Delayed Mail, in the Enterprise Data Warehouse Network Operations Data Mart.

Target Implementation Date:

September 1, 2016

Responsible Official:

Manager, Processing Operations



Linda M. Malone

cc: David E. Williams
Corporate Audit and Response Management



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