



Office of Inspector General | United States Postal Service

Audit Report

Review of Expansion of Package Sorters Investment

Report Number MI-AR-18-001 | May 17, 2018



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Highlights

Objective

Our objective was to determine whether the U.S. Postal Service's Expansion of Package Sorters capital investment achieved expected savings and performance metrics.

As ecommerce continues to grow at a rapid pace, the package delivery market has created opportunities for the Postal Service to increase revenue. The Postal Service manually processes and sorts over 1.5 billion packages each year at a cost of over \$250 million annually. To improve the efficiency of package sorting, the Postal Service has approved two decision analysis reports (DAR) through their investment review process. The DARs, referred to as Phase 1 and Phase 2 throughout this report, total [REDACTED] million.

The DARs address expansion of bins to the automated package processing systems (APPS) and automated package and bundle sorters (APBS). The additional bins will increase the number of separations that can be made during a single run on the package sorter; therefore reducing the volume that flows to bins for manual sortation. The DARs stated that reducing manual handling of packages would produce workhour savings and improve sort quality and customer service.

Deployment of Phase 1 was completed in May 2017, and management plans to complete Phase 2 by September 2018. Phase 1 contained four performance metrics to measure the success of the investment. Because the deployment is not yet complete, we did not evaluate Phase 2 performance metrics.

We measured the expected savings and net operating various for both DARs because the annual budget was developed prior to the start of fiscal year (FY) 2017 and 2018.

What the OIG Found

The Postal Service did not fully achieve the expected net savings and performance metrics for the investment. The Postal Service achieved expected workhour savings for Phase 1, but only realized [REDACTED] ([REDACTED] percent) workhour savings for Phase 2. This occurred because Finance and Planning used an older version of the DAR, instead of the approved

version, to budget workhour adjustments. As a result, the Postal Service did not realize \$ [REDACTED] million savings for Phase 2, of which \$ [REDACTED] million is recoverable from the FY 2018 budget.

The Postal Service is not tracking and reporting three of four performance metrics for Phase 1 throughout the investment. Our analysis determined:

- One metric was unable to be measured because Postal Service management incorrectly established the metric and later determined that it was not suitable for performance tracking. As a result, management excluded the metric from Phase 2.
- Two metrics were not tracked due to ineffective management oversight.

As a result, the Postal Service could not evaluate the success or impact of current or future investments.

What the OIG Recommended

We recommended management:

- Adjust annual budget to accurately capture the total net workhour savings in Phase 2 in FY 2018. As a result of our recommendation, management has taken corrective action to reduce the FY 2018 budget.
- Establish performance metrics that are reasonable and can be used to evaluate program performance; and
- Develop and implement a review process to ensure performance metrics are tracked and reported in accordance with policy.

“The Postal Service did not fully achieve the expected net savings and performance metrics for the investment.”

Transmittal Letter



OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

May 17, 2018

MEMORANDUM FOR: LUKE T. GROSSMANN
VICE PRESIDENT, FINANCE & PLANNING

ROBERT CINTRON
VICE PRESIDENT, NETWORK OPERATIONS

E-Signed by Kimberly Benoit
VERIFY authenticity with eSign Desktop
Kimberly F. Benoit

FROM: Kimberly F. Benoit
Deputy Assistant Inspector General
for Technology and Major Investments

SUBJECT: Audit Report – Review of Expansion of Package Sorters
Investment (Report Number MI-AR-18-001)

This report presents the results of our audit of the Expansion of Package Sorters Investment (Project Number 18TG002MI000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Lourdes Gatell, Director, Major Investments, or me at 703-248-2100.

Attachment

cc: Postmaster General
Corporate Audit Response Management

Results

Introduction/Objective

This report presents the results of our self-initiated audit of the U.S. Postal Service's Expansion of Package Sorters Investment (Project Number 18TG002MI000). Our objective was to determine whether the Expansion of Package Sorters capital investment achieved expected savings and performance metrics.

Background

As ecommerce continues to grow at a rapid pace, the package delivery market has created opportunities for the Postal Service to increase revenue. Customers' increasing use of ecommerce delivery options has resulted in mail volume growth of [REDACTED] million pieces in fiscal year (FY) 2017, which is a 11.4 percent increase from the prior year.

The Postal Service manually process and sorts over 1.5 billion packages each year at a cost of over \$250 million annually. To improve the efficiency of package sorting, the Postal Service has approved two decision analysis reports (DAR) through their investment review process. These DARs are dated March 2015 and May 2017, and referred to as Phase 1 and Phase 2, respectively, throughout this report.

A DAR is a document management creates to recommend an investment for approval and describes the potential problem(s) or opportunities the expenditure will address. It must provide sufficient detail, including back-up documentation, to enable approving authorities to make an informed decision regarding the use of postal funds. The Investment Review Committee (IRC)¹ uses the DAR to make strategic business decisions regarding significant investments.

During the DAR development process the sponsor or designated program manager determines a capture rate percentage to keep workhour savings

estimates conservative. The capture rate is used as an assumption to estimate projected workhour savings based on a given baseline.

The Expansion of Package Sorters investment addresses packages that have been inducted, identified, and sorted by automation but require additional sortation to achieve the required separation prior to dispatch. By increasing the number of separations on current automated package and bundle sorters (APBS)² and automated package processing systems (APPS),³ significantly less mail volume will flow to bins for manual sortation. According to these DARs, reduced manual handling should produce workhour savings and improve sort quality and customer service.

The Postal Service approved [REDACTED] million for Phase 1 and [REDACTED] million for Phase 2 to expand APBS and APPS, as shown in Table 1.

Table 1. Investment Summary

	Phase 1	Phase 2
Approved Amount	[REDACTED]	[REDACTED]
Number of Expansions	• 47 APBS • 10 APPS	• 42 APBS • 6 APPS
Return on Investment	[REDACTED]	[REDACTED]

Source: Expansion of Package Sorters DAR Phase 1, dated March 2015; and DAR Phase 2, dated May 2, 2017.

The Postal Service identified four key performance metrics in Phase 1 for evaluating the success of the Expansion of Package Sorters capital investment, as shown in Table 2. We did not evaluate Phase 2 performance metrics because the program is still in deployment and full performance results will not be available until September 2018.

¹ The IRC must review and vote on individual projects (new projects or expansions of existing projects) greater than \$5 million of combined total capital investments, development/implementation expenses, and full-up annual operating expenses. The IRC establishes Postal Service investment direction, policy, and procedures; ensures compliance with investment policy procedures; and prioritizes resource use.

² The APBS machine is designed to sort bundles and small single mailpieces into a series of containers (bins).

³ The APPS machine is designed to sort parcels to a 3-digit or 5-digit level ZIP Code; and flat bundles to a 3-digit, 5-digit, or carrier route depth of sort.

Table 2. Performance Metrics DAR Phase 1 Details⁴

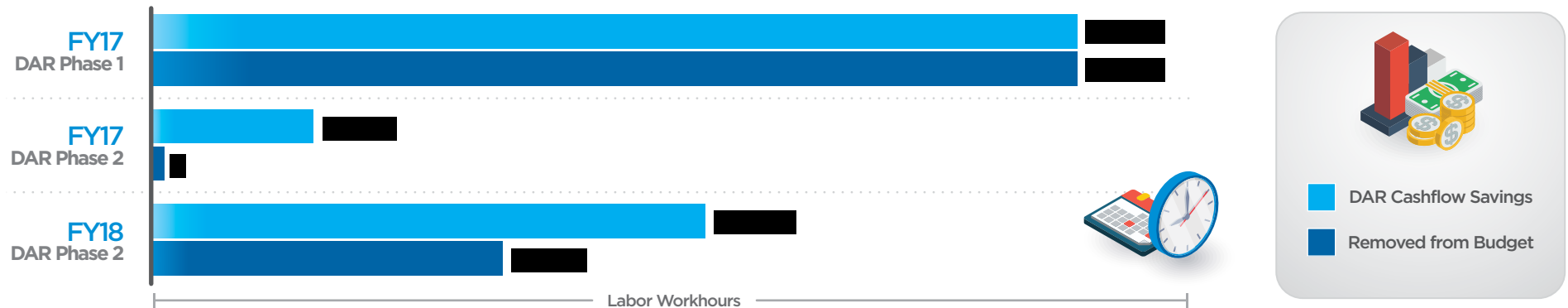
Metric	Tracking System	Method	Indicator	DAR Goal
[REDACTED]	Web End-of-Run (WebEOR)/ Electronic Data Warehouse (EDW)	Compare Actual to DAR Plan	Percentage of Priority Volume that is Actually First-Class Mail	20% decrease
[REDACTED]	WebEOR/EDW	Compare to Baseline	Pieces Sorted Per Workhour (TPH/Workhour)	Zero decrease vs. baseline ([REDACTED] pph) ⁵
[REDACTED]	WebEOR/EDW	Compare to Baseline	Pieces Sorted Per Workhour (TPH/Workhour)	Zero decrease vs. baseline ([REDACTED] pph)
[REDACTED]	WebEOR/EDW	Compare Actual to DAR Plan	Total Pieces Sorted - Total Pieces Sorted to Downflow Operations	[REDACTED]

Source: Expansion of Package Sorters DAR Phase 1, dated March 2015.

Finding #1: Labor Hour Budget Reductions

The Postal Service achieved [REDACTED] workhour savings for Phase 1, but only realized [REDACTED] percent) workhour savings for Phase 2,⁸ as shown in Figure 1.

Figure 1. Labor Workhour Reductions



Source: Expansion of Package Sorters DAR Phase 1, dated March 2015; and DAR Phase 2, dated May 2, 2017; FYs 2017 and 2018 *Area Revenue and Expense Budgets* reports.

⁴ Phase 2 of the Expansion of Package Sorters is still in deployment; therefore the performance metrics identified in Phase 2 were not within the scope of this audit.

⁵ The machine productivity is expected to perform at or above the baseline of 315 pieces per hour.

⁶ Postal Service management stated the goal of a [REDACTED] million package increase presented in the DAR was an annualized amount. The U.S. Postal Service Office of Inspector General (OIG) calculated the daily DAR goal presented in the table based on 306 work days.

⁷ [REDACTED] workhours is about \$ [REDACTED] million.

⁸ Phase 1 deployment was completed in May 2017. The Postal Service indicated deployment of Phase 2 is currently on schedule and should be completed by September 2018.

Postal Service Finance and Planning develops and allocates workhour budgets for the Postal Service's seven areas⁹ annually. The annual budget report establishes the fiscal year workhour plan. According to Postal Service policy,¹⁰ Finance and Planning should reduce the full savings identified in the DAR from the budget. However, Finance and Planning used an older version of the DAR, rather than the approved version, to budget workhour adjustments.

By not reducing net workhours savings to accurately reflect the savings in Phase 2, the Postal Service did not fully realize savings of [REDACTED] workhours, totaling [REDACTED]. For FY 2017, [REDACTED] workhours savings, totaling [REDACTED] are not recoverable.

Recommendation #1

The Vice President, Finance and Planning, adjust annual budget to accurately capture the total net workhour savings in Phase 2 in FY 2018.

As a result of our audit, management took corrective action to reduce the FY 2018 budget by [REDACTED], therefore we are closing this recommendation.

Finding #2: Phase 1 Performance Metrics

The Postal Service has not been tracking and reporting Phase 1¹¹ performance metrics throughout the progress of the investment. Specifically, three of four metrics were not tracked and reported in the quarterly compliance reports,¹² as shown in [Table 3](#).

The metric "Reduction in First-Class Mail being treated as Priority" was not tracked because Postal Service management incorrectly established the metric and later determined that it was not suitable for performance tracking. As a result, management excluded the metric from Phase 2.

For the two metrics that were not tracked, OIG analysis found:¹³

- APBS actual productivity was [REDACTED] pieces per hour (pph), which is [REDACTED] pph lower than the baseline of [REDACTED] pph.
- APPS actual productivity was [REDACTED] pph, which is a [REDACTED] pph lower than the baseline of [REDACTED] pph.

Regarding the metric that was tracked (Average Daily Volume Finalized on APBS and APPS), the result reported in the quarterly compliance reports was a [REDACTED] package per day increase. The OIG validated the Postal Service's analysis and found a [REDACTED] package per day increase. Postal Service management indicated the variance was because the initial analysis did not include the full scope of the volume data as of September 2017. Management stated the goal was presented as an annualized amount of [REDACTED] million packages increase, rather than as an average daily volume increase.

“The Postal Service has not been tracking and reporting Phase 1 performance metrics throughout the progress of the investment.”

⁹ The Postal Service's seven areas include Capital Metro, Eastern, Great Lakes, Northeast, Pacific, Southern, and Western.

¹⁰ *Budget Cookbook Reports*, Chapter 1: Budget Development Flow Chart, dated November 29, 2013.

¹¹ Phase 2 has not reached post-deployment; therefore, we did not review Phase 2 metrics.

¹² The investment status compliance report provided to the Board is identified as the Investment Highlights.

¹³ The OIG based calculation of APBS and APPS productivity metrics on volume data from locations with APBS and APPS bins expansion.

Table 3. DAR Phase 1 Performance Metric Analysis

Performance Metric	DAR Goal	Tracked and Reported	Actual Results Reported	OIG Analysis (Achieving DAR Goal)
1 [Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

Source: OIG analysis of DAR performance metrics.

Postal Service policy¹⁵ states that the sponsor is responsible for:

- Establishing metrics that can be used to evaluate program performance.
- Ensuring that projects are tracked and reported throughout the progress of the investment using compliance reports.

Compliance reports are prepared quarterly from the time a project is approved until 18 months after final deployment/completion of the program. The sponsor must document actual program performance versus DAR projections. See Table 4 for compliance and reporting responsibilities.

Table 4. Compliance and Program Status Reporting Responsibilities

Investment Funding Level	Reported By	Reviewed By	Reported To
[Redacted]	Sponsor ¹⁶	Capital & Program Evaluation	Board of Governors ¹⁷

Source: Handbook F-66.

14 Postal Service management stated the goal of a [Redacted] million package increase presented in the DAR was an annualized amount. The OIG calculated the daily DAR goal presented in the table based on 306 work days.
 15 Handbook F-66, *General Investment Policies and Procedures*, dated October 11, 2007.
 16 The sponsor may delegate compliance reporting responsibility to a designated staff member. The program manager is frequently assigned this responsibility; however, the sponsor retains accountability for ensuring complete, accurate, and timely compliance reporting.
 17 The investment status compliance report provided to the board is identified as the *Investment Highlights*.

The intent of tracking DAR-related costs and metrics throughout the investment is to provide the following assurances:

- Projects are implemented as stated in the approved DAR.
- Metrics (indicators and methods) are reviewed on an ongoing basis to evaluate achieved benefits and savings as identified in the DAR.
- Corrective action is taken as necessary and the metrics associated with these actions are tracked and reported.

This occurred because the team that created Phase 1 was different than the team that managed the implementation, deployment, and tracking of program performance.

APBS and APPS productivity metrics were not tracked and reported due to insufficient management oversight, as these metric results are marked as “N/A” on the Postal Service’s quarterly compliance reports. Currently, at seven months post-deployment of Phase 1, management indicated they need to conduct further analysis to determine productivity results.

Due to Phase 1 performance metrics not being tracked and reported in quarterly compliance reports, DAR stakeholders do not have the information needed to evaluate the success or impact of current and future investments.

Recommendation #2

The Vice President, Network Operations, establish decision analysis report performance metrics that are reasonable and can be used to evaluate program performance.

Recommendation #3

The Vice President, Network Operations, develop and implement a process to ensure performance metrics are tracked and reported in accordance with policy.

Management's Comments

Management agreed with the monetary impact and all recommendations in the report.

Regarding recommendation 1, management issued the budget adjustment for the FY 2018 portion and subsequently provided support for the corrective action taken.

Regarding recommendation 2, management agreed to include clear and traceable metrics, along with the frequency of the measurement of the metrics in future DARs. Management's target implementation date is April 1, 2019.

Regarding recommendation 3, management agreed to track metrics as stated in the DAR. Management's target implementation date is April 1, 2019.

Additionally, management expressed concern that we included Phase 2 in the audit even though it has not yet been completed. Management further stated the audit has conflicts because we recommended the Postal Service do a better job of setting and tracking metrics even though the DAR metric's goal was clearly a typographical error rather than an equipment or program flaw.

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

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations in the report and corrective actions should resolve the issues identified in the report.

Management took corrective action on recommendation 1 during the audit; therefore, we will close the recommendation upon issuance of this report.

Regarding management's comments about including Phase 2 in the audit as stated in the report, we did not evaluate Phase 2 performance metrics as the deployment is not yet complete. It will be complete in September 2018. We measured the expected savings and net operating variance for both projects because the annual budget was developed prior to the start of FYs 2017 and 2018.

Regarding management's comment that the DAR metric goal was a typographical error rather than an equipment or program flaw, we concur. As a result, our analysis was based on the average daily volume finalized on APPS and APBS, rather than the annualized volume stated in the approved DAR, which contained the error. [Table 3](#) in the report reflects the daily volume results and we explained our methodology in footnote 14.

All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. Recommendations 2 and 3 in the report should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed.

Appendices

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Appendix A: Additional Information

Scope and Methodology

The scope of our audit was the Expansion of Package Sorters Phases 1 and 2. We did not evaluate Phase 2 performance metrics because the program is still in deployment and full performance results will not be available until September 2018.

To accomplish our objective, we:

- Interviewed key personnel who manage, finance, and deploy package sorters to determine their roles and responsibilities as they relate to the DARs and gained an understanding of the deployment of and investment in the Expansion of Package Sorters.
- Obtained the latest *Area Revenue and Expense Budgets Reports* and compared workhour savings identified in the latest DARs and interviewed personnel responsible for making workhour adjustments to ensure an accurate understanding of the budget process.
- Determined whether the Postal Service tracked and reported performance metrics in DAR Phase 1, as required by policy. The team also calculated actual results for each metric and measured them against the projected goals of DAR Phase 1.

We conducted this audit from October 2017 through May 2018, in accordance with generally accepted government auditing standards and included such 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 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 on April 19, 2018, and included their comments where appropriate.

We assessed the reliability of EDW¹⁸ and WebEOR¹⁹ data by assessing the data for its completeness, reasonableness, accuracy, and validity. Additionally, we discussed the data with knowledgeable Postal Service officials. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

The OIG did not identify any prior audits or reviews related to the objective of this audit conducted in the last five years.

¹⁸ A repository for all data and the central source of information on retail, financial, and operational performance.

¹⁹ A server-based software application that stores end-of-run data from mail processing equipment in a relational database on a [REDACTED]

Appendix B: Management's Comments

ROBERT CINTRON
VICE PRESIDENT, NETWORK OPERATIONS



May 7, 2018

LORI LAU DILLARD

SUBJECT: Review of Expansion of Package Sorters
(Project Number 18TG002MI000)

The following is provided in response to your audit of the Expansion of Package Sorters Investment (Project Number 18TG002MI000). We appreciate the review of these projects and the identification of opportunities for improvement within our processes.

However we do believe that the audit process was flawed in attempting to combine two separate projects into one audit, and in conducting the audit before the second of the two projects has been completed.

We agree with the Monetary Impacts identified, but want to note that we have now issued the budget adjustment for the FY18 portion.

The audit has conflicts within itself: a key point of the recommendation is that the Postal Service needs to do a better job of clearly setting and tracking metrics – a recommendation which we accept (see below). However in the same audit the OIG analysis criticized the performance of the equipment against the self-same flawed metric (DAR metric goal value was an annual number, the units were stated to be daily numbers – a pretty obvious typographical error rather than an equipment or program flaw).

Responses to individual findings are provided below:

Recommendation 1:

The Vice President, Finance and Planning, adjust annual budget to accurately capture the total net savings in Phase 2 FY 2018.

Management Response Recommendation 1:

This recommendation has been addressed and completed.

475 L'ENFANT PLAZA SW
WASHINGTON, DC 20260-7100
WWW.USPS.COM

Recommendation 2:

The Vice President of Network Operations, establish DAR performance metrics that are reasonable and can be used to evaluate program performance.

Management Response Recommendation 2:

We agree with this recommendation. Future Decision Analysis Reports (DAR) Cases will include clear and traceable metrics with data sources specified, along with the frequency of the measurement of the metrics.

Target Implementation Date:

April 1, 2019

Responsible Official:

Manager, Network Operations Engineering

Recommendation 3:

The Vice President of Network Operations, develop and implement a process to ensure performance metrics are tracked and reported in accordance with policy.

Management Response Recommendation 3:

We agree with this recommendation. Metrics shall be tracked as stated in the DAR.


Target Implementation Date:

April 1, 2019

Responsible Official:

Manager, Network Operations Engineering.

If you have any questions about this response, please contact John Dunlop at (202) 268-4590.


Robert Cintron

cc: Manager, Corporate Audit Response Management



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1735 North Lynn Street
Arlington, VA 22209-2020
(703) 248-2100