



OFFICE OF  
**INSPECTOR  
GENERAL**  
UNITED STATES POSTAL SERVICE

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# **Benchmarking of Costing Methodologies**

## **Management Advisory**

August 14, 2013

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**Report Number MS-MA-13-004**



OFFICE OF  
**INSPECTOR  
GENERAL**  
UNITED STATES POSTAL SERVICE

# HIGHLIGHTS

August 14, 2013

## Benchmarking of Costing Methodologies

Report Number MS-MA-13-004

### **BACKGROUND:**

The U.S. Postal Service's product-costing system is designed to meet the statutory reporting requirements that each class of mail bears the costs to that class or service and inform management decisions. The system, refined over many years, commenced with passage of the Postal Reorganization Act of 1970.

Costing data are derived from the accounting system, with costs attributed to products based on data from manual sampling, statistical systems, and special studies. This is the second of two reviews requested by the chief financial officer and executive vice president. The first described the background and history of the Postal Service's costing methodologies and concerns with those methodologies. The objective of this review was to identify potential enhancements to the current Postal Service's costing approach that could be used to better inform business decisions and competitive pricing.

This report identifies evolutionary enhancements to the current costing system. However, as the Postal Service's costing needs become increasingly complex, entire alternative costing systems should also be evaluated. Therefore, at the request of the postmaster general, we will separately review whether new approaches to costing would better

meet the evolving needs of the Postal Service in the 21<sup>st</sup> Century.

### **WHAT THE OIG FOUND:**

While the Postal Service uses several best practices in product costing, changes are needed to reduce postal investments in the process and improve the usefulness of the resulting data. Such improvements include moving from expensive manual data collection systems to an increased use of automated data collection systems. Currently, the Postal Service spends about \$100 million annually to develop the costing data reported to the Postal Regulatory Commission.

Further enhancements include the use of more granular data, more timely reporting (some reporting is quarterly and some is annual), and better coordination among groups within the Postal Service.

### **WHAT THE OIG RECOMMENDED:**

We recommended the Postal Service enhance its current product-costing system by establishing an organization-wide strategy, better coordinating among functional units regarding data usage, and generating more granular and timely costing information.

[Link to review the entire report](#)



August 14, 2013

**MEMORANDUM FOR:** JOSEPH CORBETT  
CHIEF FINANCIAL OFFICER AND  
EXECUTIVE VICE PRESIDENT

ELLIS A. BURGOYNE  
CHIEF INFORMATION OFFICER AND  
EXECUTIVE VICE PRESIDENT

E-Signed by Inspector General  
VERIFY authenticity with eSign Desktop

**FROM:** Darrell E. Benjamin, Jr.  
Deputy Assistant Inspector General  
for Revenue and Performance

**SUBJECT:** Management Advisory – Benchmarking of Costing  
Methodologies  
(Report Number MS-MA-13-004)

This report presents the results of our review of the Benchmarking of Costing Methodologies (Project Number 12RG026CRR000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Janet Sorensen, director, Sales and Marketing, or me at 703-248-2100.

Attachment

cc: Megan J. Brennan  
Joseph E. Nash  
Steven R. Phelps  
Virginia J. Mayes  
Corporate Audit and Response Management

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## Introduction

This report presents the results of our benchmarking of the U.S. Postal Service's Costing Methodologies (Project Number 12RG026CRR000). This report responds to a request from the chief financial officer and executive vice president to benchmark the Postal Service's costing methodologies against those of other organizations to identify best practices for possible implementation. The objective of this review was to identify potential alternatives or enhancements to the Postal Service's costing approach that could be used to better inform business decisions and competitive pricing.

This is the second of two reports responding to a request by the chief financial officer and executive vice president. The first report addressed the background and history of the Postal Service's product costing methodologies, as well as known concerns with those methodologies. The U.S. Postal Service Office of Inspector General (OIG) also issued a white paper on short-run costing and Postal Service pricing at the request of the chief financial officer and executive vice president.<sup>1</sup> This review addresses financial risk. See [Appendix A](#) for additional information.

The Postal Service maintains a product-costing system designed to meet statutory reporting requirements to ensure that each class or type of mail bears the direct and indirect costs to that class or service and provide information to support management decisions. This system was developed with passage of the Postal Reorganization Act of 1970 and has since been refined.

As a result of the Postal Accountability and Enhancement Act (PAEA) of 2006, the costing methods and use of cost data are under the purview of the Postal Regulatory Commission (PRC). The Postal Service files its costing results with the PRC every year as part of the *Annual Compliance Report*. The PRC verifies that approved methodologies were followed in developing the costs. The PRC must approve changes to the approved methodologies. Such changes could be the result of rulemaking involving other parties interested in postal costing.

## Conclusion

While the Postal Service uses several best practices in product costing, changes are needed to reduce postal investments in the process and improve the usefulness of the resulting data. Such improvements include moving from expensive manual data collection systems to an increased use of automated data collection systems. Currently the Postal Service spends about \$100 million annually to develop the costing data reported to the PRC.

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<sup>1</sup> *Short-Run Costing and Postal Pricing* (Report Number RARC-WP-13-004, dated January 9, 2013).

Further enhancements include the use of more granular data, more timely reporting (some reporting is quarterly and some is annual), and better coordination among groups within the Postal Service.

Based on recommendations we have made in prior audits, the Postal Service has taken some steps to explore additional ways to obtain and use automated data (see [Prior Audit Coverage](#) for details). However, we believe additional opportunities exist for the Postal Service to use automated data generated by its systems and processing equipment, especially with the increased use of intelligent mail barcoding. As the Postal Service continues to focus on cutting costs and creating specific rates for individual customers, it will need improved cost data. More granular cost data, such as regional, seasonal, or even carrier route-level data will help tailor customer specific contracts, allowing the Postal Service to have more pricing flexibility and increase its ability to be more competitive.

We will provide the technical benchmarking report to management, in its entirety, under separate cover.

### **Opportunities for Improvement**

The benchmarked organizations demonstrating leading practices in product cost reporting use systems that produce more granular data, provide timelier reporting and include high levels of coordination and planning. Enhancements to the Postal Service's current cost reporting system would provide management with more timely and accurate data for day-to-day decision making as well as the necessary information required for more competitive customer-specific pricing.

#### **Granularity of Data**

In addition to reporting more frequently, most benchmarked organizations primarily use system-generated (automated) data for producing cost reports. Many of the postal operators and nonpostal businesses we surveyed have systems for extracting automatically generated data from product handling operations. Some organizations surveyed are significantly ahead of the Postal Service in their use of operations data instead of special finance studies to support the product costing system. The benefits of moving to operations data include:

- Data that is more timely, with the eventual possibility of near real-time.
- Data that is more granular, which results in better costing of more disaggregated views of the Postal Service product line, such as customer-specific costs, regional costs, or costs at the ZIP Code-level.
- A decreased level of special effort required to collect data.

The Postal Service currently develops costing information from data acquired from manual collection of statistical sampling tests and special studies to supplement the automated data.<sup>2</sup> In 2010, the total budget for the Regulatory Reporting and Cost Analysis group was \$102 million, which includes manual data collection, statistical sampling, production of the Cost and Revenue Analysis (CRA), and other functions.

The availability of suitable information is required to move from a reliance on manual data collection and special studies to the use of operational data to support product costing analysis. This would provide the basis for significant improvements in the quality of cost data, the methods to develop cost estimates, and the variety of cost reports available to management. The use of automated data may allow for performing CRA at the ZIP Code-level or relevant regional areas to support the development of customer-specific rates where appropriate.

The Postal Service has taken steps to explore additional ways of obtaining automated data. We believe additional opportunities exist to use more of the automated data generated by the Postal Service's systems and processing equipment, especially with the increased use of Intelligent Mail<sup>®</sup> barcodes (IMb). As the Postal Service continues to focus on cutting costs and creating specific rates for individual customers, it will need improved cost data. More granular cost data, such as regional, seasonal, or even carrier route or ZIP Code-level data will assist management in tailoring customer specific contracts. However, a major challenge with using automated data is the difficulty of obtaining accurate, reliable, and timely data. We highlighted specific challenges with data in our recent audit on data governance.<sup>3</sup>

### Timeliness of Reporting

Most of the benchmarked organizations report official cost data to a regulator or their government annually and two organizations report quarterly. In addition, three organizations produce quarterly product costs for internal use by management, and two organizations do so monthly. The other organizations provide management product costs annually or on an as-needed basis.

The Postal Service produces the CRA report for regulatory reporting and management purposes annually, although ad-hoc cost reports are provided to management quarterly. The quarterly reports are not considered statistically reliable, as certain required parameters (such as sample design change, panel rotation, and software changes) are available only annually. We have previously acknowledged in the field of pricing, the importance of timely data for decision making in a competitive environment. Without near real-time volume and revenue data for products, it is unlikely that management can ever manage prices/products effectively. Assuming a price/product could be appropriately priced to generate new revenue and cover costs, unknown changes in volume or revenue could indicate that a product thought to be profitable has actually

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<sup>2</sup> To provide data for these systems, data collectors conduct almost 600,000 manual data collection readings a year.

<sup>3</sup> *U.S. Postal Service Data Governance* (Report Number DP-AR-13-004(R), dated April 23, 2013).

become unprofitable.<sup>4</sup> Moreover, stakeholders and management have observed that some costing data may be too stale for dynamic decision making.<sup>5</sup>

Increased use of system-generated data could enable the Postal Service to produce more reliable cost data at increased frequencies and at more disaggregated levels. These enhancements would provide management with more accurate and timely information for better management decision making.

Table 1 summarizes the frequency with which benchmarked organizations report cost data.

**Table 1. Frequency of Product Cost Reporting**

| Reporting Timeframe | To Management  |               | To Regulator   |               |
|---------------------|----------------|---------------|----------------|---------------|
|                     | Postal Service | Foreign Posts | Postal Service | Foreign Posts |
| Monthly             | No             | 2 of 9        | N/A            | 0 of 9        |
| Quarterly           | Yes            | 3 of 9        | N/A            | 2 of 9        |
| Annually            | Yes            | 4 of 9        | √              | 7 of 9        |

Source: Participating foreign postal organizations and national regulatory agencies.

### Coordination and Planning

The benchmarked organizations with the best product costing processes had an actively integrated development and management system involving finance, operations, product managers, and sales.

Typically, operations produced most of the data while the finance organization analyzed the data to develop and disseminate product cost estimates for use by headquarters staff, product managers, and sales. The benchmarked organizations asserted that this is a well-coordinated process with checks and balances through established procedures. For example, in some organizations, before the operations organization makes changes that would affect data quality, approval from the finance organization is required. Also, mechanisms exist for product managers and sales staff to participate in the methodology decisions affecting the allocation of costs. When unexpected cost changes occur, the operations, finance, and product offices jointly troubleshoot the issue to identify whether the root cause is in the data, analysis methodologies, or in operations.

In a prior audit report we recommended that the Postal Service establish coordination mechanisms among operations, finance, and users of cost data to govern data

<sup>4</sup> *Postal Pricing Strategy* (Report Number CI-AR-12-002, dated December 9, 2011).

<sup>5</sup> *Postal Service Product Costing Methodologies* (Report Number MS-MA-13-002, dated April 11, 2013).

production and reporting.<sup>6</sup> In response to these recommendations, the Postal Service established a steering committee and is exploring additional data sources for use in product costing. However, based on our interviews with Postal Service officials, while some conversations have started, the coordination process exhibits shortfalls relative to the leading practices of the benchmarked partners. For example, some officials cited instances in which operations units changed data production protocols without the knowledge of the finance personnel who use the data. Other Postal Service officials we interviewed observed that there may be relevant data currently collected for operational purposes but it is not leveraged for product cost analysis, suggesting that opportunities exist for finance to use current operations data. In addition, existing operations data may not include data relating to certain functional areas, such as manual mail handling.

The Postal Service could further enhance communications and coordination by establishing a formal process between the finance officials responsible for the CRA report, the product managers who use the cost data, and Operations managers who provide input data. This will be critical to the process of creating a useful roadmap, ensuring that requirements from a CRA perspective are considered along with the primary operational needs of the Postal Service. It may be the case that, as certain operational systems are planned, implemented, and upgraded there may be opportunities for small requirement changes that would be highly beneficial to the analysts preparing the CRA.

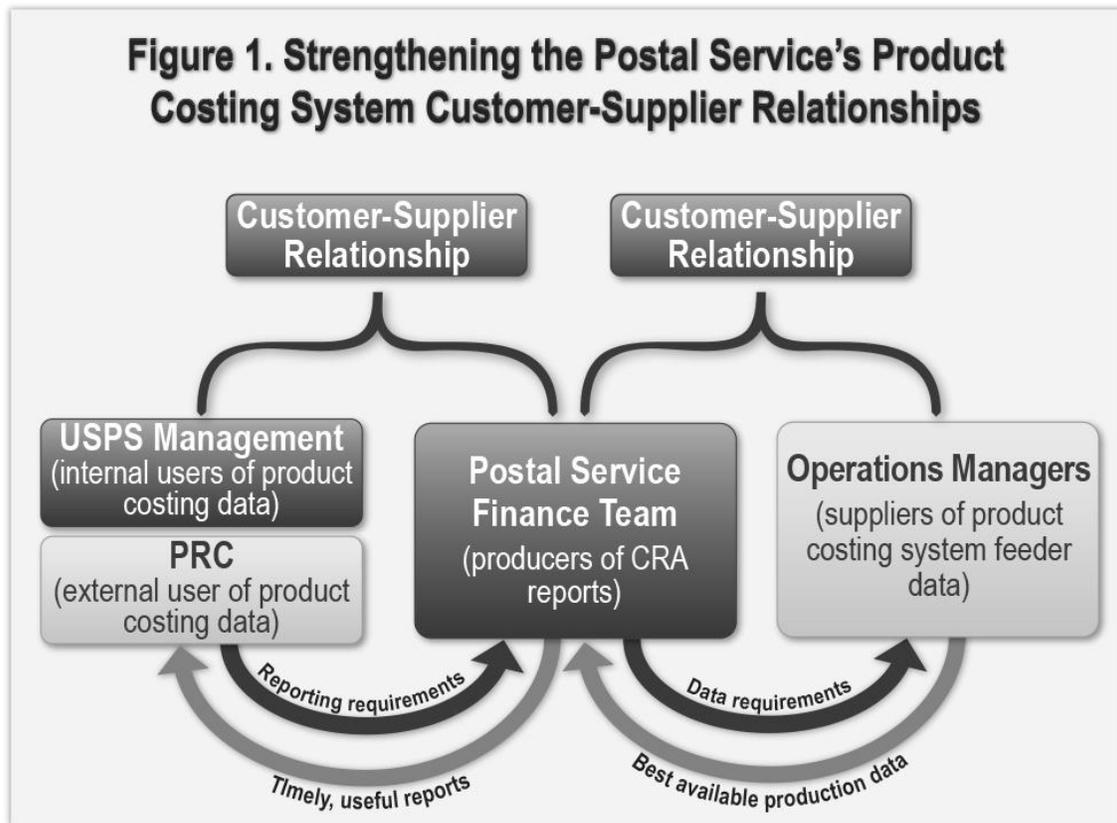
The two key 'customer-supplier' relationships involved are:

- The customer-supplier relationship between the users, or 'customers,' of the product costing system data (such as Postal Service pricing, marketing, budgeting, and Operations executives and the PRC) and the suppliers of the CRA report (such as, the Postal Service's Finance team).
- The customer-supplier relationship between the 'customer' of operations data (such as the finance team producing CRA reports) and the 'supplier' of operations data (such as the operations managers that own the operational workload tracking systems).

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<sup>6</sup> *Transportation Cost System Inputs into the Cost and Revenue Analysis* (Report Number CRR-AR-11-004, dated September 19, 2011); *Revenue, Pieces, and Weight Inputs Into the Cost and Revenue Analysis* (Report Number CRR-AR-12-003, dated January 27, 2012); and *In-Office Cost System Inputs into the Cost and Revenue Analysis* (Report Number CRR-AR-12-004, dated May 3, 2012).

These relationships are depicted in Figure 1.



Source: OIG.

### Cost Concepts

If successfully implemented, improvements such as timely reporting, more granular data, and better coordination of functional units could lead to more fundamental changes to the Postal Service's costing systems. Such changes could include bottom-up costing used by a majority of the benchmarking organizations and by the Postal Service for cost avoidance calculations to support its workshare programs. By implementing systems and procedures similar to the benchmarked organizations, the Postal Service will be able to produce higher quality, more useful data for effective management decision making.

### Cost Types

The benchmarked foreign postal operators and nonpostal businesses use a variety of recognized cost types for business decision making.

Such cost types include marginal, incremental, fully distributed, and stand-alone costs.

- Marginal cost is the cost of producing one additional unit of a product.
- Incremental cost is the total cost removed if a specific product were eliminated all together.
- Fully distributed costing (FDC) is a costing approach in which all costs — variable and fixed — are assigned to products offered.
- Stand-alone cost is the cost of a product when only that particular product is produced.

Marginal and incremental costs can be further characterized as long-run and short-run costs. Long-run refers to a period that is long enough for costs to stabilize to reflect changes in volume. Short-run costs result when the period is not long enough for costs to adjust to reflect changes in volume. Institutional costs, sometimes referred to as overhead costs, are costs that are shared and cannot be reliably attributed to a particular product.

- Long-run refers to costs that would exist if the postal operator or nonpostal business were optimizing the utilization of their assets. Because changes in demand for the postal or nonpostal businesses' products, along with other factors, can cause underutilization or overutilization of assets in the short run, long-run often assumes a time horizon when optimization can be achieved.
- Short-run costs reflect operations in which one or more inputs cannot be varied in contrast to long run where all inputs can be varied. As a matter of practicality, for the Postal Service, the long-run usually refers to the costs that are expected to be current for 1 to 3 years in the future. Short-run refers to current and near future when an underutilization or overutilization of assets may exist. For instance, the Postal Service claimed excess delivery capacity existed in 2009 and that marginal delivery costs would be less than official CRA estimates as new mail volume was stimulated through a temporary price reduction, known as a summer sale.<sup>7</sup> By the following year, the Postal Service claimed that the excess delivery capacity had been sufficiently reduced to eliminate it as a justification for the second summer sale.<sup>8</sup> CRA cost estimates usually are considered to approximate long-run marginal costs.

Table 2 presents the most common types of costs used by the benchmarked organizations as well as the Postal Service.

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<sup>7</sup> See U.S. Postal Service: Notice of Market-Dominant Price Adjustment, page 3 of PRC Docket Number R2009-3. This 'Summer Sale' incentive program is not only designed to increase mail volume, but the timing of the program will take advantage of the Postal Service's current excess capacity to deliver additional volume at relatively low cost during the summer months.

<sup>8</sup> See U.S. Postal Service: Notice Of Market-Dominant Price Adjustment, page 3 of PRC Docket Number R2009-3; and page 16 of PRC Docket Number R2010-3.

**Table 2. Comparison of Product Cost Types Used by the Postal Service and Benchmarked Partners**

| Approach                    | Postal Service    | Foreign Postal Operators | Other Regulated or Similar Businesses |
|-----------------------------|-------------------|--------------------------|---------------------------------------|
| Long-Run Incremental Cost   | Yes               | 8 of 9 <sup>9</sup>      | 2 of 4                                |
| Long-Run Marginal Cost      | Yes               | 5 of 9                   | 4 of 4                                |
| Short-Run Marginal Cost     | Yes <sup>10</sup> | 1 of 9                   | 3 of 4                                |
| Fully Distributed Cost      | Yes <sup>11</sup> | 8 of 9                   | 4 of 4                                |
| Stand-Alone Cost            | No                | 4 of 9                   | 1 of 4                                |
| Standard Cost <sup>12</sup> | No                | 1 of 9                   | 1 of 4                                |

Source: Participating foreign postal organizations, national regulatory agencies, and other organizations.

Although most benchmarked organizations calculate various types of costs, they use only one cost type as the basis for pricing. Table 3 shows the cost types used for pricing by the benchmarked organizations and the Postal Service.

**Table 3. Usage of Cost Estimates as a Basis for Pricing**

| Approach                  | Postal Service   | Foreign Postal Operators <sup>13</sup> | Other Regulated or Similar Businesses |
|---------------------------|------------------|--|---------------------------------------|
| Long-Run Incremental Cost | No               | 2 of 7                                 | 0 of 4                                |
| Long-Run Marginal Cost    | Yes              | 2 of 7                                 | 3 of 4                                |
| Short-Run Marginal Cost   | No <sup>14</sup> | 0 of 7                                 | 0 of 4                                |
| Fully-Distributed Cost    | Yes              | 3 of 7                                 | 1 of 4                                |
| Stand-Alone Cost          | No               | 0 of 7                                 | 0 of 4                                |

Source: Participating foreign postal organizations, national regulatory agencies, and other organizations.

In addition to using cost types for management decision making, regulatory reporting, and pricing, cost types are also used as a means of testing cross-subsidization.<sup>15</sup> Most regulatory agencies have restrictions with regard to cross-subsidization between monopoly and nonmonopoly products. The most common cost type used for testing cross-subsidization is long-run incremental costs. Four of the seven benchmarked foreign postal organizations, as well as the Postal Service, use long-run incremental costs to determine whether there is cross-subsidization. The other three benchmarked

<sup>9</sup> The eight participating foreign postal organizations plus Postcom provided information on a total of nine posts.

<sup>10</sup> The Postal Service used short-run marginal costs for its Summer Sales program.

<sup>11</sup> The Postal Service calculates FDC on an informal basis.

<sup>12</sup> Costs that are predetermined based on engineering studies.

<sup>13</sup> Please note that two of the foreign postal operators surveyed did not use cost estimates as a basis for pricing.

<sup>14</sup> The Postal Service did use short-run marginal costs for its Summer Sales program in 2009 and 2010.

<sup>15</sup> If a product's revenue exceeds its incremental cost, that product is not subsidized by another product.

regulated organizations used fully distributed costs and stand-alone costs, respectively. See [Appendix B](#) for additional information regarding cost types.

### Costing Approaches

The Postal Service calculates various cost types such as marginal costs, incremental costs, and fully distributed costs similar to the benchmarked organizations. The Postal Service primarily employs the top-down costing approach for determining these costs. In a top-down costing approach, cost accounting data from the general ledger are identified at a global level and then successively assigned to activities, subactivities and finally to elementary activities (tasks) using various accounting system assignment methods. By contrast, in a bottom-up costing approach, product costs are developed by estimating the cost of each individual elementary activity (task) of the mail handling process and then summing up those costs.

**Table 4. Usage of Bottom-Up Costing**

| Benchmarked Organizations             | Use Bottom-Up Costing |
|---------------------------------------|-----------------------|
| Foreign Postal Operators              | 7 of 9                |
| Other Regulated or Similar Businesses | 3 of 4                |

Source: Participating foreign postal organizations, national regulatory agencies, and other organizations.

Bottom-up costing has given several of the foreign postal operators and businesses more flexibility in producing disaggregated pricing and helped identify areas of inefficiency. Specifically, our survey of benchmarked organizations found claims that production processes are much more uniform and adherence to work productivity standards more rigorously enforced than in the Postal Service. Therefore, a bottom-up approach would help the Postal Service develop more disaggregated data because it would provide detailed cost information at the activity (task)-level for products.<sup>16</sup>

However, the Postal Service experiences significant diversity among facilities in productivity in the various areas of operations, such as mail handling, even though similar equipment and operating plans are used. This has implications on the ability to develop bottom-up cost models that adequately reflect current Postal Service operations to provide a primary source of cost estimates. So, while there may be advantages to expanding the Postal Service’s use of bottom-up pricing, it warrants cautious development and adoption.

<sup>16</sup> The Postal Service uses bottom-up costing approach for its cost avoidance models to determine such factors as workshare discounts.

## Recommendations

We recommend the chief financial officer and executive vice president:

1. Develop a formal process, in coordination with the chief information officer and chief operating officer, to strengthen the communication process between Finance, Operations, and users of the product costing system data regarding data needs and production.
2. Establish a long-term implementation plan, in coordination with the chief information officer and chief operating officer, to expand usage of system-generated data that includes a data transition roadmap.

We recommend the chief financial officer and executive vice president direct the manager, Regulatory Reporting and Cost Analysis, to:

3. Expand usage of currently available system-generated data from operations or data that can be available in the near term to enable the product costing system to rely more on operations data and less on special studies.
4. Evaluate the feasibility of performing cost and revenue analysis at the ZIP Code-level or relevant regional areas to support development of customer-specific rates for those products for which such price distinctions are considered legal.

## Management's Comments

Management generally agreed with our findings and recommendations 1, 2, and 3. Regarding recommendation 1, management has established interactions with Engineering, Information Technology, and other groups to explore data requirements and the availability and usefulness of census data. In subsequent communication, management stated the completion date for this effort is July 31, 2016.

Regarding recommendations 2 and 3, Regulatory Reporting and Cost Analysis is collaborating with Engineering, Information Technology, and Operations to analyze the usefulness of data for use in the development of the CRA report. A cross-functional team has begun identifying requirements for product costing and the availability of the necessary data. Management stated the completion date for recommendations 2 and 3 is July 31, 2016.

Management disagreed with recommendation 4, stating that the benchmarking survey showed only a few organizations measured costs at disaggregated bases, such as ZIP Code-levels. Management asserted the recommendation demands using scarce but significant resources for a complex task that only a few surveyed organizations undertake. Management cited the dismantling of an Activity-Based Cost System as an example of the Postal Service's inability to develop cost, by shape, processed at the

various processing plants. See [Appendix E](#) for management's comments, in their entirety.

### **Evaluation of Management's Comments**

The OIG considers management's comments responsive to recommendations 1, 2, and 3 and corrective actions should resolve the issues identified in the report.

Regarding recommendation 4, the benchmarking survey revealed that growth in the use of intelligent barcodes has facilitated the use of automatically-generated data in cost analysis methods of foreign postal operators. Some of the organizations have almost 100 percent of their products barcoded and scan nearly every activity performed. Some of these foreign postal operators extract and use images of mailpieces to obtain information on the characteristics of the mail as being processed on sorting equipment. These additional data sources help them produce product cost data at more disaggregated levels.

The Postal Service has newer technologies, such as IMb and Surface Visibility, providing granular data and increasingly greater product visibility. Leveraging these additional capabilities, and properly integrating operational and financial systems, will enable the Postal Service to move towards using system generated data to produce more granular product cost information, such as product costs at ZIP Code-level. The Postal Service executives we interviewed cited the need for such disaggregated data for the efficient conduct of the Postal Service business. Consequently, we consider management's comments regarding recommendation 4 to be nonresponsive; however, we will not pursue through the formal resolution process.

The OIG considers all the recommendations 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 Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed.

## Appendix A: Additional Information

### Background

The Postal Service maintains a product costing system designed to meet statutory reporting requirements and provide information to support management decisions. This system was developed and refined over many years, starting roughly with passage of the Postal Reorganization Act of 1970. Until 2006, the product costing system's main purpose was to support the proceedings of rate cases filed by the Postal Service with the PRC, though postal management has also used it to assist in budgeting, investment decision analysis, and product marketing.

The PAEA requires that each product covers its attributable cost. The PAEA also requires competitive products to collectively cover 5.5 percent of institutional costs. Attributable cost for a particular product equals the total product volume variable costs plus any product-specific costs. The PRC also uses cost estimates to ensure workshare discounts do not exceed avoided costs and that revenue exceeds costs for market-dominant products.

The current costing system uses activity-based costing (ABC) cost assignment principles to allocate costs to products. The ABC system is based on economic principles rather than accounting principles. ABC is a method of assigning costs to activities using direct trace, cause-and-effect, or allocation basis. Economic principles report marginal and incremental costs rather than fully assigned product costs.

The main output of the Postal Service's product costing system is the CRA report. The Postal Service obtains actual costs from its financial accounting system as the basis to prepare the CRA report. Since the financial accounting system does not break costs down to the mail class and product level, statistical information sources are used with operational data to prepare the CRA report.

### Objective, Scope, and Methodology

The objective of this review was to identify potential enhancements to or replacement of the Postal Service's costing approach that could be used to better inform business decisions and competitive pricing.

We reviewed policies and procedures relating to the Postal Service's costing environment and studied cost accounting procedures followed by foreign postal organizations. We engaged a contractor to assist us in benchmarking product cost accounting methodologies, followed by foreign postal organizations and organizations in similar businesses. We provided guidance to the contractor and supervised its work

to accomplish our audit objective. We interviewed Postal Service officials in Sales, Operations, and Finance who use CRA report cost information to make business decisions.

The benchmarking study encompassed eight foreign postal operators and their associated National Regulatory Authorities (NRA), two large companies in regulated industries, and two companies engaged in businesses similar to the Postal Service. The eight participating foreign postal operators were:

- Australia Post.
- bPost, Belgium's designated postal operator.
- Canada Post.
- La Poste, France's designated postal operator.
- New Zealand Post.
- Post Danmark, Denmark's designated postal operator.
- PostenAB, Sweden's designated postal operator.
- Royal Mail, the United Kingdom's designated postal operator.

The participating NRAs<sup>17</sup> were:

- Autorité de Régulation des Communications Électroniques et des Postes, France's NRA.
- Australian Competition and Consumer Commission, Australia's NRA.
- Belgian Institute for Postal Service and Telecommunications, Belgium's NRA.
- Ofcom, the United Kingdom's NRA.
- Postcom, Switzerland's NRA.<sup>18</sup>
- Swedish Post and Telecom Authority, Sweden's NRA.

We also benchmarked with United Parcel Service and J.B. Hunt, two businesses with operations similar to the Postal Service; and the Tennessee Valley Authority and Southern California Edison, two organizations in the regulated industry.

We prepared benchmarking questionnaires, which the benchmarked partners completed, and had debriefing conference calls with participants to review and clarify the responses. Through the questionnaire responses and subsequent debriefing calls, we obtained an understanding of how comparable organizations, postal services in foreign countries, and similar regulated industry organization accounted for and allocated operating costs. We evaluated the information gathered from the

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<sup>17</sup> There is no postal regulatory authority in Canada. New Zealand's NRA declined to participate.

<sup>18</sup> The eight participating foreign postal organizations plus Postcom provided information on nine posts.

benchmarked partners and compared and contrasted their costing methodologies to those of the Postal Service.

We conducted this review from August 2012 through August 2013 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 May 29, 2013, and included their comments where appropriate.

We evaluated business processes, the availability of system-generated data, and potential enhancements to systems and processes. We did not base our conclusions on the results of computer-generated data, and therefore, did not evaluate the reliability of any such data.

Prior Audit Coverage

| Report Title  | Report Number | Final Report Date | Monetary Impact |
|---|---------------|-------------------|-----------------|
| <i>In-Office Cost System Inputs into the Cost and Revenue Analysis Report</i>   | CRR-AR-12-004 | 5/30/2012         | \$500,000       |
| <p><b>Report Results:</b><br/>                     With additional system enhancements, the Postal Service could use data from mail processing systems to determine the mail processing portion of labor costs for products and services. With the proper system changes, the Postal Service could obtain the census data necessary for mail processing cost determination. This would reduce dependence on manual data collection and could provide annual net savings of about \$500,000. The system enhancements would also provide important benefits to cost control, mail acceptance, and revenue protection. Management agreed with our recommendations but did not agree with the cost saving estimates.</p>                            |               |                   |                 |
| <i>Revenue, Pieces, and Weight Inputs into the Cost and Revenue Analysis Report</i>   | CRR-AR-12-003 | 1/27/2012         | \$12,788,000    |
| <p><b>Report Results:</b><br/>                     The Postal Service could significantly reduce manual data collection for Revenue, Pieces, and Weight estimation by modifying existing automated processes to collect mailpiece images for analysis and by moving sampling from delivery units to supporting processing plants. We estimate the Postal Service could save about \$13 million in annual data collection costs. The Postal Service could make the hardware changes needed with existing technology, which would benefit both operational needs and statistical sampling efforts. Management agreed with the recommendations but disagreed with the assessment of the state of automated data and the cost-savings estimate.</p> |               |                   |                 |

| Report Title   | Report Number                 | Final Report Date | Monetary Impact |
|--|-------------------------------|-------------------|-----------------|
| <i>Transportation Cost System Inputs into the Cost and Revenue Analysis Report</i>   | <a href="#">CRR-AR-11-004</a> | 9/19/2011         | \$980,000       |
| <p><b>Report Results:</b><br/>                     Additional planning, systems design, and system integration could enable the Postal Service to use more of the data generated by operational systems for CRA cost attribution purposes. We estimate the Postal Service could save about \$980,000 in annual data collection costs. The Postal Service could make the hardware changes needed with existing technology, which would benefit both operations and statistical sampling efforts. Management agreed with the recommendations but disagreed with the assessment of the state of automated data and the cost-savings estimate.</p> |                               |                   |                 |
| <i>Cost and Revenue Analysis Reporting Model</i>   | <a href="#">CRR-AR-10-003</a> | 7/27/2010         | None            |
| <p><b>Report Results:</b><br/>                     Controls over the development and maintenance of CRA reports were generally adequate. Supporting workbooks, formulas, and computer programming code are incorporated into the CRA model function as intended. However, the Postal Service needs to establish proper access controls for its shared network drive to limit file access to personnel who prepare and maintain CRA reports. Management agreed with the findings and recommendations.</p>   |                               |                   |                 |

## Appendix B: Cost Concepts and Usage

### Fully Distributed Costs

Under the FDC approach, all costs, whether direct or indirect, are assigned to products. Among the benchmarked organizations, costs that could not be directly associated with a product, which are similar to the institutional costs in the Postal Service context, were distributed proportionally to products based on some method considered causal by management. These organizations typically used volumes or revenue to allocate the overhead costs when not possible to make it proportionate to some already allocated costs. In many organizations, choosing an allocation approach, such as volume, revenue, or other factors, is based on management discussion and consensus rather than established principles. Some organizations determine the allocation approach annually. Other organizations, including the Postal Service, do not review the FDC allocation approach annually, but rather on an as-needed basis, when someone in the organization requests an adjustment.

Three foreign postal operators reported using FDC to establish a floor for pricing. One used FDC as a cross-subsidy test while three reported no testing for cross-subsidy. Another used it for calculating Universal Service Obligations (USO) and a third used it to report to their regulatory authority. Only one made the number public. All postal operators recognized that setting all prices close to FDC ensured that all costs were covered and that a profit was generated but many claimed it was not a tenable or sustainable position for all products due to the impact on customer usage. One postal operator explicitly stated that an attempt to use FDC as a price floor resulted in prices so high that customers abandoned the mail to such an extent that net revenue decreased. Therefore, most postal operators and all nonpostal businesses recognized that it could not be a universal price floor and that it was necessary to price below FDC for many products.

Economists have asserted that distributing nonvolume variable costs by using arbitrary allocation rules could be counterproductive.<sup>19</sup> While the European Union Postal Directives are often cited as requiring FDC as a cost floor, many of those interviewed in this benchmark study claimed their prices merely needed to have a cost-based orientation.<sup>20</sup> That is, their prices needed to be related to product cost. They asserted that there was some flexibility in the type of cost used and that it was not required to be FDC in all cases. The nonuniversal use of FDC as a basis for pricing demonstrates this more flexible interpretation.

The Postal Service calculates an FDC for all products annually and presents results to the Board of Governors. When new products are proposed, an FDC cost is presented to

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<sup>19</sup> See white paper, *Costs for Better Management Decisions: CRA Versus Fully Distributed Costs* (Report Number RARC-WP-12-016, dated September 17, 2012).

<sup>20</sup> Article 12 of the Third Postal Directive (2008/06/EC) provides that prices for each of the services forming part of the universal service “shall be cost-oriented.”

the Board of Governors if the expected revenue as a percentage over marginal CRA costs is less than a given hurdle rate. The Postal Service does not make the FDC public or present FDC results to the PRC or make it an absolute floor for pricing.

### Incremental Cost

Incremental cost is the cost that would be saved if the product was not offered but all other products continued to be produced. In general, this comes from an analysis of the product production processes. In the case of the Postal Service, incremental cost is the sum of the volume variable and the infra-marginal costs plus any product-specific fixed costs. Inframarginal cost is the total cost of providing all units of product minus the volume-variable cost portion and any product-specific costs. Eight foreign postal operators and two nonpostal businesses calculate an incremental cost for each product.

The foreign postal operators cited incremental cost exceeding revenue for a product or group of products as the standard test for cross-subsidy.<sup>21</sup> Four NRA we contacted cited testing for cross-subsidy as one of the top three reasons for cost analysis, but three did not cite it due to lack of a reserved area in their country. Several people we interviewed from European postal operators or their regulator stated that a competition authority or commission was the government organization that was concerned with existence of cross-subsidy. The Postal Service reports incremental cost estimates to the PRC for products classified as competitive.

The most commonly cited incremental costs were long-run incremental costs. Incremental costs are used as an absolute price floor only by two of the benchmarked foreign postal operators, but none of the nonpostal businesses claimed rigid adherence to this principle. Unless a product's unit revenue exceeds average incremental costs, revenue will not cover the added cost of providing the product. But in some instances, it was asserted that it is better to achieve some contribution to fixed costs by pricing below incremental costs and retaining a customer than always insisting on pricing over average incremental cost. However, incremental cost is a crucial decision-making factor when introducing new products and when operating in a competitive market.

Calculating incremental costs for an existing product involves estimating what costs would be if the product was eliminated and the other products remained as they are. This can be highly speculative for large volume products since eliminating one of those products could result in major modifications to the organization's operating structure and network costs. For example, eliminating First-Class Mail<sup>®</sup> service might result in a much different delivery schedule and network configuration. But for small volume and new products, incremental costs can generally be estimated in a reliable manner and are widely used as a pricing floor to avoid cross-subsidies and ensure that products cover

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<sup>21</sup> See Baumol, Panzar, and Willig, *Contestable Markets and the Theory of Industry Structure*, pages 351-356 and 508-509 for discussion of the use of incremental cost and stand-alone cost as tests for cross-subsidy. One postal operator calculates both types of costs to test for cross-subsidies. It judges a product as being cross-subsidized if its revenue is less than its incremental costs. Conversely, that postal operator judges a product to be a source of cross-subsidy if revenue exceeds stand-alone costs.

the cost of being included in the firm's offerings. As such, it is a reasonable requirement for the Postal Service's competitive products.

### Long-Run Marginal Costs

Five foreign postal operators and all four nonpostal businesses reported calculating marginal costs for products. Three of these foreign postal operators and two of the nonpostal businesses use bottom-up methods to calculate marginal costs.

The Postal Service calculates marginal costs similar to the way five foreign postal operators and all four nonpostal businesses calculate marginal costs for their products. The Postal Service calculates a set of marginal costs for each cost segment, component, and subcomponent for the primary products and adds, wherever applicable, a small product-specific cost to obtain the attributable costs for those products. For most products attributable and marginal costs are nearly equal. The results are published annually in the CRA report. The Postal Service also prepares quarterly estimates of costs by product and distributes these estimates within the Postal Service, although statistical variation in estimates over the first few quarters suggests that these estimates are not fully reliable. As the year goes on and additional data are aggregated, the estimates become more reliable and the fourth quarter report numbers are usually close to those in the fiscal year report. These quarterly reports are not publically available.

For the Postal Service, attributable cost is the dividing line between a product being considered profitable and unprofitable in that it either does or does not make a contribution to common institutional costs. Thus, attributable cost is typically considered as a price floor. Before passage of the PAEA in 2006, the Postal Service used attributable cost as an absolute price floor for products in that subclasses had to have revenue in excess of attributable costs. Under the PAEA caps, price increases are based on consumer price index (CPI) changes and those increases do not necessarily guarantee that attributable costs will stay within those price ranges. For example, Periodicals class mail does not cover attributable costs despite annual price increases at or near the CPI-based cap.

Even in instances in which higher prices might be feasible within the price cap, such as with Standard Mail<sup>®</sup> flats, Postal Service prices have recently been set below attributable costs in recognition of the need to use the scarce CPI cap authority to increase prices for other products in that class of mail. However, generally, the Postal Service treats marginal costs as the starting point for prices and in almost all cases the price cap mechanism results in prices that cover marginal costs and provide some contribution to covering network (or institutional) costs.<sup>22</sup> The price floor is not where most prices are set in the benchmarked organizations. Setting prices at marginal costs plus some markup is common and is automatically satisfied when prices are set above incremental or FDC costs. The benchmarked organizations avoid setting prices at or

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<sup>22</sup> The two major exceptions to setting prices above marginal costs are Periodicals and Standard flats. See PRC Docket ACR 2011.

below marginal rates in most instances but consider it necessary in some cases, due to market conditions.

Attributable cost estimates are also used as the building blocks for preparing cost estimates for negotiated service agreements (NSAs) with customers whose mailings of certain products, such as Priority Mail, will not incur all the cost elements included in the attributable cost calculations for the product. In such cases, the attributable costs for the candidate products are adjusted, often using bottom-up costing methods, by excluding the cost elements the customer will not incur for the product. To determine work-sharing discounts, the Postal Service calculates bottom-up cost models of the postal work activities that are avoided because mailers are assuming these activities as part of their work-sharing arrangement, thus reducing the Postal Service's activities. These modeled costs are then weight-averaged and aggregated and the aggregated cost is adjusted to match the CRA cost. This approach represents a hybrid method that uses both top-down and bottom-up costs to calculate workshare discounts for special rate categories.

Only one foreign postal operator and two nonpostal businesses reported using marginal costs as a price floor. None of the respondents use it to test for cross-subsidization. The Postal Service uses marginal costs plus product-specific costs as the price floor.

### Stand-Alone Costs

Four foreign postal operators and one nonpostal business use stand-alone costs. One of these foreign postal operators uses stand-alone costs to develop the relative cost of providing two different types of products. The ratio of these two stand-alone costs is used to distribute the accounting system cost between two products. Another foreign postal operator uses stand-alone costing to assess potential cross-subsidies.

### Short-Run Marginal Costs

One foreign postal operator and three nonpostal businesses calculate short-run marginal costs. They use these costs for special pricing to use excess capacity and generate new volume for the period when short-run costs are expected to remain low. Typically, excess capacity cannot be reduced in a short-run timeframe by adjusting the use of resources. The Postal Service has used a form of short-run costs to support the 'summer sale' prices in 2009 and 2010.<sup>23</sup> The nonpostal businesses contacted use short-run marginal costs when there is excess capacity or a need to stimulate demand in low-usage periods. For example, short-run marginal costs are used as a basis for seasonal or time-of-day pricing.

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<sup>23</sup> See U.S. Postal Service: Notice of Market-Dominant price Adjustment in PRC Docket Number R2009-3, page 3 and Docket Number R2010-3, page 16.

### Allocation of Idle and Excess Capacity Costs in Cost Determination

We asked postal operators and companies in similar businesses how they allocate the costs of idle capacity (such as unused facility space or automation equipment capacity) that exist during certain periods of the day or year. Most do not specifically measure the cost of idle capacity and, thus, distribute this cost to all products over the course of a year. One postal operator allocates idle capacity cost to products that require it (such as expedited products in transportation). One postal operator considers idle capacity cost not to be incremental at the product or customer level and, therefore, does not assign it to products. This is potentially the result of how the operator calculates incremental costs. Two other businesses consider idle capacity as a peak-load cost<sup>24</sup> and assign it to the product or products that require idle capacity to meet service requirements.

We also queried the postal operators on how they allocate costs of excess capacity (such as unused facility space or automation equipment capacity) that exist due to declining mail volume. Two postal operators do not allocate excess capacity to products and the others do not specifically identify excess capacity and distribute all capacity costs to products. Most benchmark partners indicated that appropriate allocation of idle and excess capacity is still a challenge.

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<sup>24</sup> Peak load costs occur because of constraints placed on the ability of the Postal Service to handle the flow of mail into and through postal operations in the most efficient manner. The difference in cost between the constrained situation and the unconstrained, or less constrained, situation becomes the peak load costs due to the constraints being examined. Conversely, it is the cost savings from removing or mitigating the constraints.

## Appendix C: Development of Bottom-Up Costing

The Postal Service primarily employs the top-down costing approach for determining product costs. In a top-down costing approach, cost accounting data from the general ledger are identified at a global level and then successively assigned to activities, subactivities, and, finally, to elementary activities or tasks using various accounting system assignment methods and distribution keys derived from various sources, such as sampling systems and operations data. By contrast, in a bottom-up costing approach, product costs are developed by estimating the cost of each individual elementary activity or task of the mail handling process and then summing up those costs. A bottom-up approach would help the Postal Service to develop more disaggregated data.

One post distributes delivery costs in an arbitrary 60, 30, and 10 ratio corresponding to their products with overnight, 2-day, and 7-day delivery standards. Other foreign postal operators perform extensive work measurement studies of each step of the production process within an ABC cost pool to allocate costs to products. The result is a set of factors that apportion the total costs of a production activity to products for a given period, most commonly at least 1 year. Some foreign postal operators and nonpostal businesses use these factors not only for existing products but also use factors such as geographic location, product shape and weight, customer, and period that is used in developing new, customer-oriented products. This disaggregation permits some foreign postal operators and nonpostal businesses to produce costs by numerous subdivisions as discussed below.

This development of models or factors to distribute all costs of the production steps results in a FDC of those activities. In the case of the Postal Service and at least one other post, only the volume variable share of the delivery costs is allocated to products with the remainder characterized as institutional costs. To achieve fully distributed costs, it is necessary to adopt some rules for distributing the institutional costs to products. The most typical approach is to distribute in the same proportion as some set of noninstitutional costs, revenue, and volume, or a combination of these, as the Postal Service does.

When models of mail handling processes are used to estimate costs, the resulting total costs will typically not equal the general ledger costs from the accounting system. When a discrepancy occurs, it is necessary to adjust or reconcile the modeled costs by adjusting the bottom-up estimate by some factor and subsequently modifying the models to produce better matches. The Postal Service performs such adjustments on the models used to estimate avoided costs from worksharing with mailers. These adjustments can reach up to a factor of three for some components of the model, which demonstrates that the models, while helpful, cannot produce accurate cost estimates on their own, but rather must be considered in tandem with the general ledger costs.

For foreign posts and nonpostal businesses that rely on bottom-up costs to make pricing decisions, the variation between the modeled and general ledger costs was quite small. This close approximation appears to stem from three observed conditions that are not present in the Postal Service. One enabling condition is the ability to build the models to reflect differences that affect productivity in operations, such as local excess capacity, geography, and customers. One organization maintains models to a service level equivalent to ZIP Codes, allowing the productivity factors used in the models to accurately reflect operations. The ability to produce such models derives from the ability to collect sizeable amounts of data from operations at each disaggregation level.

A second enabling condition is the uniformity of cost of similar operations. For example, sorting facilities are either small in number or easy to manage in a uniform manner and maintain equivalent productivity rates. Other posts or businesses aggressively manage to achieve uniformity in productivity and consistently meet preset performance standards.

A third enabling condition is the ability to quickly detect when models are failing to accurately represent what is actually occurring. This capability is due to having near real-time disaggregated data on cost drivers. In this manner, model failures can quickly be detected and fixed before the need for a major reconciliation with accounting system costs is necessary. Nevertheless, most posts and businesses using bottom-up costing for the major share of costs perform an annual review and reconciliation of the model costs and the general ledger. They claim that the system works with minor annual reconciliations.

The Postal Service does not have the enabling conditions that allow extensive use of bottom-up costing. Productivity varies significantly among sorting facilities rendering models developed on the basis of averages not reflective of actual operations at each sorting facility, and this likely contributes to the mismatch in accounting costs and bottom-up estimates. Cost data estimates depend on surveys only statistically valid on an annual and national basis, which inhibit disaggregation that could reflect differences in productivity. With increased use of operations data, such as mail history and surface visibility reports, greater standardization may occur. In addition, reducing the number of mail processing facilities as volume decreases may assist in creating more standardized mail processing environments and more uniform productivity among the residual facilities. As use of operations data for cost estimation expands, it should be possible to increase the disaggregation of costs in the analysis of data.

The foreign postal operators and nonpostal businesses using top-down approaches typically do not model the production process to derive the allocation of costs to products. Rather, they use econometric analysis or other analytic techniques to allocate costs to products by ABC cost pool. The Postal Service identifies the cost of handling an additional product by examining how the costs vary with volume at the margin. Then these volume variable costs are distributed to products on the basis of distribution keys reflecting pieces handled or labor hours expended on the activity product. Unless the costs vary in direct proportion to volume or the cost driver (such as volume, cubic foot

miles, transactions), the allocated costs will only be a portion of the total costs determined by the accounting system.

## Appendix D: Glossary and Key Terms

**ABC** An accounting method of assigning costs to activities based on their use of resources. Cost pools are created for groups of activities that can be assigned together. Product assignment or allocation methods are identified for each activity. The results are then applied to the respective assignment or allocation methods to determine the amount of each cost pool and each activity to be assigned to each product or service.

**Attributable Cost** Total volume variable costs of that product plus any product-specific fixed costs for that product. Since product-specific fixed costs for postal products typically are small relative to volume-variable costs, average attributable cost for the Postal Service is a close approximation of marginal, or volume-variable, cost. The PRC uses attributable cost to determine if each competitive product is meeting the requirement to earn revenues in excess of its cost.

**Bottom-Up Costing** Estimating the cost of each individual element (activity/task) of the mail handling process and then summing those costs to develop the product cost.

**Fixed Cost** Costs that do not vary with output over a given time period.

**Fully Distributed Costing** A costing approach in which total costs, including institutional or common costs, whether direct, indirect, variable, or fixed, are assigned to products offered. FDC accounting systems use arbitrary methods to allocate fixed and indirect costs to products.

**Incremental Cost** In a multiproduct firm like the Postal Service, incremental cost is the amount of cost avoided/incurred by eliminating/adding a given product (for example, if the current output of a product were reduced to zero and all associated costs with producing the product were eliminated). These are the costs that would be avoided, in the long-run, if the given product is no longer offered, but all other products are retained. Incremental cost, defined over a specified period such as 1 year, consists of the annualized fixed costs of the product and all variable costs that would be avoided if the product were not offered.

Incremental cost can be defined for a specific product or for a group of products. When incremental cost is defined for a group of products, the fixed costs to be included are all those costs that would be avoided if the entire group of products were not offered.

Incremental cost is usually expressed as average incremental cost. This is obtained by dividing the incremental cost of a product by the volume of the product.

If the price of a product exceeds its average incremental cost, the firm is better off producing this product because its incremental revenue is greater than its incremental cost. Incremental cost also may serve as a cross-subsidy test: if incremental revenue exceeds incremental cost for a particular product, the product is considered as receiving no cross-subsidies.

The Postal Service calculates incremental cost as: incremental cost = volume variable cost + infra-marginal cost + product-specific fixed cost.

### **Institutional Costs**

Costs for a group of products that are shared, joint, or common that cannot be reliably attributed on causal grounds to any particular product. Institutional cost is composed of two parts: fixed costs and 'infra-marginal costs.' These costs are shared by the group in question and consequently, they must be assigned to the corresponding group of products or services as a whole.

Institutional costs are the residual after volume-variable and product-specific fixed costs are subtracted from total costs. For the Postal Service, product-specific fixed costs are quite small for most products so institutional costs are roughly equal to total costs minus volume-variable costs. Most institutional costs are not traditional 'fixed costs' (such as overhead) but network costs. Postal Service institutional costs include delivery infrastructure, administrative and field support, and retail infrastructure. Institutional cost determines the amount of 'mark-up' the Postal Service must charge to break even.

### **Long-Run Average Cost**

The long-run total cost divided by total output. It is always less than or equal to short-run average costs.

The 'long run' refers to a period long enough to allow for all inputs to be changed. A significant volume change in the short run will result in higher total costs than in the long run when inputs can be combined in the optimal combinations to minimize total costs. The period historically considered appropriate for postal costing is around 3 years. Long-run average cost is always less than or equal to short-run average cost.

**Long-Run  
Marginal  
Cost**

The additional cost created by the 'last' unit of volume, when all inputs can be varied. These are costs that vary with volume changes in the long run. For instance, they include costs such as facility costs that cannot be adjusted in the short run but require a period of time to allow them to be changed.

The 'long run' refers to a period long enough to allow for significant adjustments to the volume change to be made. The period historically considered appropriate for postal costing is around 3 years. Long-run marginal cost, in contrast to long-run average cost, may be greater than, equal to or less than the short-run marginal cost.

The 'long-run' refers to a period of sufficient duration to enable significant adjustments to the volume change to be made. The time period historically considered appropriate for postal costing is around 3 years.

**Marginal  
Cost**

The cost of producing an additional unit (such as the last unit) of a given product/service as output changes. Marginal cost is important for pricing analysis and yields a price floor for stand-alone products. If price is below marginal cost then inefficient production is taking place.

**Negotiated  
Service  
Agreement**

A NSA offers a customized price to those customers who can avoid certain costly activities or increase their volume of mail. In contrast to a workshare discount, which is offered to all customers who can avoid the activity for a specific rate category, NSAs are designed with a specific customer in mind (though for market-dominant products, 'similarly situated' customers must be offered the same type of NSA).

**Product-  
Specific  
Cost**

Costs that are directly attributable to a given product. For most postal products, product-specific fixed cost is a relatively small portion of cost. For the Postal Service, in fiscal year 2010, product-specific fixed costs represented about 3 percent of total costs.

However, for some new products, especially digital products, product-specific fixed costs, such as software development costs, can be very significant.

**Reserved  
Area**

The segment of postal services that is limited to those postal operators providing universal services within national boundaries. In practice, this means that letter mail/parcel under certain weight and cost limits can only be handled by those operators who are bound by USOs. The rationale behind the reserved area is that it is

an appropriate form of compensation for taking on the uneconomic burden of universal service, when this burden has been shown to exist.

**Short-Run  
Marginal  
Cost**

The marginal costs for operations during a period short enough that adjustments cannot be made to fully optimize postal assets. That is, when volume changes but all inputs cannot be adjusted then the resulting costs are defined as short-run. It is typically the near term until long-run changes are made to optimize the use of assets. If assets are being optimally used then short-run equals long-run cost.

**Stand-Alone  
Costs**

Costs involved in the production process in relation to how many units are produced.

**Standard  
Costing**

Costs based on an industrial engineering study that determines the standards of efficient operations and the relevant necessary expenditures including capital material labor and overhead for a selected period and for a prescribed set of working conditions or production volume.

**Top-Down  
Costing**

In the top-down costing approach, cost accounting data from the general ledger are identified at a global level and then successively assigned to activities, subactivities and finally to elementary activities/tasks using various assignment methods.

Currently, the Postal Service's workshare discounts are developed using a top-down approach through the following steps:

- Identify the activities that will be avoided for each type of workshare.
- Using bottom-up cost methods to estimate the cost savings associated with avoiding these activities. These bottom-up cost estimates are reconciled with the top-down costs at the subclass or equivalent product level.
- Set the discount as close to the estimated cost savings as possible.

This approach is considered 'top-down' because it begins with the total incurred cost of the end-to-end product and estimates savings based on that full cost.

**USO**

The USO is the requirement by law or regulation that postal operators provide some services that an unregulated business

would not offer for economic reasons. For example, delivery to every address within their countries and, in the case of letters, at a uniform price and on a 5- or 6-day delivery schedule. The government monopoly in postal delivery and restrictions on private industry entry has traditionally been the means of ensuring that Postal Operators can pay the costs of their USOs.

**Variable Cost**

Costs that vary with the level of output.

**Volume-Variable Costs**

Costs that are equal to the marginal cost multiplied by the current volume. This is the cost calculated from using the marginal cost as the cost for each product piece. These costs are directly associated with individual products and causally assignable to them. Volume-variable costs are equal to accrued cost minus non-volume variable cost. The unit volume-variable costs that the Postal Service currently reports are mathematically equivalent to marginal costs.

**Worksharing**

Worksharing occurs when large mailers or mailers' agents perform some operations normally performed by the Postal Service (such as presorting, barcoding, or transporting the mail) in exchange for discounted rates. The discounts are aimed to match the Postal Service's avoided costs.

## Appendix E: Management's Comments

JOSEPH CORBETT  
CHIEF FINANCIAL OFFICER  
EXECUTIVE VICE PRESIDENT



July 23, 2013

JUDITH LEONHARDT  
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Benchmarking of Costing Methodologies (Report Number MS-MA-13-DRAFT)

The Postal Service appreciates the efforts of the Office of Inspector General (OIG) in surveying costing practices employed by foreign postal operators and their regulatory authorities; regulated companies; and companies with similar logistics and delivery operations. A benchmarking study such as this one provides an important comparison of the Postal Service's costing to the methods used by other entities.

The Postal Service recognizes that the prevailing conclusion of the survey is that the Postal Service is following many of what the authors consider to be "best practices" used by the surveyed entities. Specifically, the survey results show that the Postal Service employs costing theory and analytical approaches that are appropriate to its operating environment and consistent with those used by the majority of the postal operators and other entities.

For example:

- The Postal Service's use of long-run marginal costing is consistent with five of nine postal operators and all four of the private entities surveyed;
- The Postal Service's calculation of Fully Distributed Costs mirrors the practices of eight of nine postal operators and all four of the private entities;
- The Postal Service's use of long-run incremental costs is consistent with that of eight of the nine postal operators.

The survey provides an overall sense that, while improvement is always possible, by and large, the Postal Service employs appropriate industry standard costing methodologies.

Despite the progress, there does not seem to be consensus within the Postal Service, or between the Postal Service and the OIG regarding the availability of usable data. Mail processing equipment provides almost no automated data at the product level. The adoption of the full-service IMb has not yet reached the level of adoption necessary to be used for costing and is not required for mailers to qualify for automation rates until January 2014. The recommendation in this report that the Postal Service develop costs at the ZIP Code level is somewhat inconsistent with the recommendations regarding use of automated data, as very little data, including MODS data, is available at most delivery units. As the Postal Service indicated in the Periodicals Mail Study Report, co-authored with the Postal Regulatory Commission, the only visibility into activities at the delivery unit or non-MODS offices comes from the In-Office Cost System (IOCS). Diminishing or dismantling the IOCS sampling at the non-MODS offices would leave the Postal Service without any ongoing understanding of product costs at those facilities.

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The Postal Service submits that several of these recommendations are, for the most part, already actively being tracked in almost identical form as a result of other audits.

**Recommendation 1:**

We recommend the chief financial officer and executive vice president: Develop a formal process, in coordination with the chief information officer and chief operating officer, to strengthen the communication process between Finance, Operations, and users of the product costing system data regarding data needs and production.

**Management Response/Action Plan:**

Management agrees with this recommendation. As indicated in its responses to Recommendation 1 in Report CRR-AR-12-004, Recommendation 1 in Report CRR-AR-12-003, and Recommendation 1 in Report CRR-AR-11-004, Management has already established ongoing interactions among the groups identified, as well as other groups such as Information Technology and Engineering, to explore data requirements and the availability and usefulness of census data. Similarly, as a result of CRR-AR-12-002, the Finance and Operations functions are in constant communication and collaboration regarding data quality and availability.

**Management Response/Action Plan:**

Please refer to the Management responses to Recommendation 1 in Report CRR-AR-12-004, Recommendation 1 in Report CRR-AR-12-003, Recommendation 1 in Report CRR-AR-11-004, and Report CRR-AR-12-002.

**Target Implementation Date:**

This work is ongoing.

**Responsible Official:**

Manager, Regulatory Reporting and Cost Analysis

**Recommendations 2 and 3:**

Recommendation 2: We recommend the chief financial officer and executive vice president: Establish a long-term implementation plan, in coordination with the chief information officer and chief operating officer, to expand usage of system-generated data that includes a data transition roadmap.

Recommendation 3: We recommend the chief financial officer and executive vice president direct the manager, Regulatory Reporting and Cost Analysis, to: Expand usage of currently available system-generated data from operations or data that can be available in the near term to enable the product costing system to rely more on operations data and less on special studies.

**Management Response/Action Plan:**

Postal management agrees with these recommendations. Regulatory Reporting and Cost Analysis is already collaborating with Information Technology, Engineering, and Operations to analyze the usefulness of known available operational data that can be used in the development of the Cost and Revenue Analysis report. The cross-functional team has begun the process of identifying the requirements for product costing and availability of the data sets. Specifically, in response to Recommendation 2 in Report CRR-AR-11-004, Regulatory Reporting and Cost Analysis has been investigating the availability and possible usefulness of data for transportation costing, and in response to Recommendation 1 in Report CRR-AR-12-004, the Postal Service stated that it is already working with other groups to assess the capabilities and identify the gaps in existing census data. Similar efforts are being tracked in relation to Recommendation 1 in Report CRR-AR-12-003. Regulatory Reporting and Cost Analysis has already begun tracking the sources of possible data and initiated a scoping study. In addition, Lean Six Sigma projects have been established to investigate the viability of replacing existing data sources with the known

alternatives. Based on the findings, Regulatory Reporting and Cost Analysis will create a project plan to use these data as appropriate. The adoption of the alternative data sources will also, necessarily, require approval by the Postal Regulatory Commission. A data transition roadmap would only be useful if the timing of the availability of robust system-generated data were known.

Target Implementation Date:

The implementation date by which existing data sources, including special studies and sampling systems, can be replaced with "system-generated data" will vary depending upon the availability and validity of the data, as well as Commission approval of such replacement. This work is ongoing.

Responsible Official:

Manager, Regulatory Reporting and Cost Analysis

Recommendation 4:

We recommend the chief financial officer and executive vice president direct the manager, Regulatory Reporting and Cost Analysis, to: Evaluate the feasibility of performing cost and revenue analysis at the ZIP Code level or relevant regional areas to support development of customer-specific rates for those products for which such price distinctions are considered legal.

Management Response/Action Plan:

Recommendation 4 recommends the Postal Service evaluate the feasibility of developing costs and revenues at the ZIP Code level. However, few of the postal operators surveyed measure costs on such disaggregated bases. For example, only three measure costs based on the origin facility where mail is handled and three measure costs based on geographical region where it is delivered. The Management Advisory acknowledges that for the one organization that maintained models to service level equivalent to ZIP Codes, the effort required "sizeable amounts of data from operations at each disaggregation level." Given the small number of postal operators that measure costs on this geographically disaggregated basis, Recommendation 4 asks the Postal Service to devote scarce but significant resources toward a complex and burdensome task that very few of the surveyed operators undertake.

Management disagrees with this recommendation. At significant expense, until approximately two years ago, the Postal Service maintained an Activity-Based Costing (ABC) System that relied upon TACS, WebEOR, MODS, and other data systems in order to develop a set of differential costs for mail, by shape, processed at the various mail processing plants. The investigation and analysis conducted revealed that it was not possible to develop cost information by product, nor was it possible to expand this system to encompass activities at non-MODS offices, including delivery units, small Post Offices, or retail units. Before dismantling the ABC System, a survey of postal management was performed to identify users of the system to ensure that the discontinuation of the system would not be inordinately disruptive. Other than some postal processing facilities which used the ABC System to benchmark their performance against those of other mail processing facilities, no users of the system could be identified. In addition, previous attempts have been made to link revenue to postal facilities. Two intractable issues arose during those efforts. Mail does not always originate and destinate in the same facility or service area (finance numbers), necessitating the development of a necessarily arbitrary method of allocating revenue to the originating service area and the destinating service area. With the adoption of centralized payment systems, in the absence of electronic manifests, it is not always possible to identify where the mail is entered. Reporting of revenue should be tied to financial accounting systems that are compliant with SOX controls and scrutiny by auditors, and most current sources of revenue data would not provide the entry point of the mail and also be compliant with SOX and auditors' requirements. Given the lack of postal resources available for the maintenance and improvement of the existing cost processes designed to develop cost estimates at the product level on a national basis in order to comply with PAEA and Commission rules, development of costs and revenues at a ZIP Code or regional level is not feasible at this time.

This report and management's response do not contain information that may be exempt from disclosure under the FOIA.



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