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Postal Rate Commission
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BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

CONFIRM

Docket No. MC2002-1

DIRECT TESTIMONY
OF
NORMA B. NIETO
ON BEHALF OF
UNITED STATES POSTAL SERVICE

CONTENTS

DIRECT TESTIMONY

OF

NORMA B. NIETO

AUTOBIOGRAPHICAL SKETCH

My name is Norma B. Nieto. I am a Principal Consultant at PricewaterhouseCoopers LLP (hereafter PwC), where I have worked since 1993. During that time, I have worked on many consulting projects for the United States Postal Service, specializing in financial and statistical analysis, with an emphasis on cost systems, including the Transportation Cost System (TRACS).

Most recently, I supported Special Services management in the development of new enhancements to certified mail and return receipts, with a focus on costing the enhancements and changes. I have directed or participated in several studies regarding attributable costing for new products, including electronic-based services. My experience with the Postal Service also includes cost analysis in areas such as transportation, labor, buildings, marketing studies, and capital evaluation projects.

Over the past seven years, I have visited a number of Postal Service field offices including airport mail facilities (AMFs), bulk mail centers (BMCs), processing and distribution centers (P&DCs), and associate post offices (AOs).

In Docket No. R2001-1, I testified as a witness before the Postal Rate Commission on behalf of the Postal Service (USPS-T-26) regarding unit volume variable costs in support of a number of special service fees proposed by witness

Mayo (USPS-T-36), including: Delivery Confirmation, Signature Confirmation, return receipts, and the enhancement to certified mail and registered mail. In Docket No. R97-1, I testified as a witness on behalf of the Postal Service on the Transportation Cost System (TRACS).

My academic background includes a bachelor's degree in Industrial Management and Economics from Carnegie Mellon University in 1993, with course work in statistics, and a Masters in Business Administration from the Kellogg Graduate School of Management at Northwestern University in 2000 where I specialized in Marketing and Strategy.

I. PURPOSE OF TESTIMONY

The purpose of my testimony is to present estimated Test Year Confirm® costs in support of Confirm® fees proposed by witness Kiefer (USPS-T-5). My testimony presents the development of these costs, beginning with an overview of the cost components associated with Confirm® and a summary of volume variable and product specific Confirm® costs. I then describe the general methodology I used in estimating Confirm® costs and in categorizing costs as volume variable or product specific. Finally, I describe in detail the development of cost estimates for the technology, program support, field support, and marketing cost components and describe the cost elements (pools) that make up those components. In this detailed description of the development of specific costs, I discuss, as necessary, my treatment of costing issues specific to a given cost pool.

II. GUIDE TO SUPPORTING DOCUMENTATION

In addition to this testimony, Library Reference USPS-LR-2/MC2002-1, Supporting Spreadsheets for Witness Nieto (USPS-T-3), presents my detailed cost analyses and spreadsheets. I do not have any other workpapers.

III. SUMMARY OF COST COMPONENTS AND RESULTS

In this section of my testimony, I present an overview of Confirm® cost components and summarize the costs of Confirm®.

A. Cost Components

Confirm® has four main types of costs. These cost components – information technology, program support, field support, and marketing – are made up of sub-elements I refer to as cost pools. The information technology component includes depreciation of software, hardware, and system development expenditures. The program support component includes dedicated program management and consulting contractor support. The field support component includes field technology chargebacks, helpdesk costs, and any attributable shared infrastructure costs in the field. The marketing component includes advertising expenditures and costs for various marketing services and promotional activities. I detail the nature of each cost component, respective cost pools, and the development of cost estimates for each of these in Section V of my testimony.

B. Cost Analysis Results

Table 1 presents Test Year costs for Confirm®. Given the nature of Confirm®, the majority of Confirm® costs are product specific and do not vary with volume.[1]

[1] Costs listed in Table 1 are product specific unless labeled volume variable.

Table 1: Confirm® Cost Analysis Summary

	TY 2003
Information Technology	
Product Specific Hardware/Software Depreciation	
Web Servers	$ 38,273
Miscellaneous Hardware/Software	$ 25,593
Subtotal	$ 63,867
Volume Variable Hardware/Software Depreciation	
EPO Servers	$ 366,482
EPO Storage	$ 279,338
Database Software	$ 51,554
Subtotal	$ 697,374
System Development Depreciation	$ 1,177,527
Total Information Technology	$ 1,938,767
Program Support	
Dedicated Program Labor	$ 163,376
Consulting Support	$ 527,702
Total Program Support	$ 691,078
Field Support	
Product Specific Field Support	
Field Technology Support	$ 1,199,597
Shared Infrastructure	$ -
Subtotal	$ 1,199,597
Volume Variable Field Support	
Customer Support Helpdesk	$ 394,719
Total Field Support	$ 1,594,316
Marketing	
Marketing Services	$ 60,174
Promotional Activities	$ 750,000
Total Marketing	$ 810,174
Total Confirm Incremental Costs	**$ 5,034,335**

Table 2 depicts total costs broken into volume variable costs and product specific costs, and calculates the percentage of total costs that are volume variable.

Table 2: Volume Variable vs. Product Specific Cost Summary

	TY 2003
Volume Variable Costs	$ 1,092,093
Product Specific Costs	$ 3,942,242
Total Confirm Incremental Costs	$ 5,034,335
Percent Volume Variable	21.7%

I divided total volume variable costs and total incremental costs by the projected number of subscriptions in the Test Year to determine a unit volume variable cost and a unit incremental cost (both per subscription). This unit cost analysis is shown in Table 3.

Table 3: Unit Cost Analysis

	TY 2003
Total Subscribers	1,126
Volume Variable Costs	$ 1,092,093
Unit Volume Variable Costs	$ 970
Total Incremental Costs	$ 5,034,335
Unit Incremental Costs	$ 4,471

IV. OVERVIEW OF COSTING METHODOLOGY

In estimating Confirm® costs, I applied a four-step methodology based on the principle of cost causality, according to which costs are assigned to a product only if they are caused by the provision of that product.[2] The principle of cost causality is

[2] The principle of cost causality as the basis for cost attribution is discussed in detail in Witness Takis' testimony (USPS-T-4) in Docket No. MC2000-2.

consistent not only with sound economic theory, but also with past Commission precedent.[3]

Step 1: Identify and understand the process and technology of production.

In this step I consulted technology developers, field support personnel (including knowledgeable personnel in technology, operations, and support functions), and program managers associated with Confirm® to develop an understanding of the operational realities of Confirm® and the causal relationship between its provision and costs incurred by the Postal Service.

Step 2: Identify the resources used in each step of production and delivery of Confirm®.

Upon mapping the technology and production processes, I identified the resources (both new and existing cost components) drawn upon by Confirm®, including technology, maintenance, and program management.

Step 3: Determine the causal relationship between Confirm® and both product specific and volume variable costs.

In this step, I analyzed each cost component/pool according to the principle of cost causality to determine the extent to which its costs are attributable to Confirm®. Figure A below depicts the decision process associated with this step.

[3] For a Commission discussion of causation as the principle of cost attribution, see, e.g., Docket No. R90-1, PRC Op., Vol. 1 at III-210.

Figure A: Confirm® Cost Development Decision Process

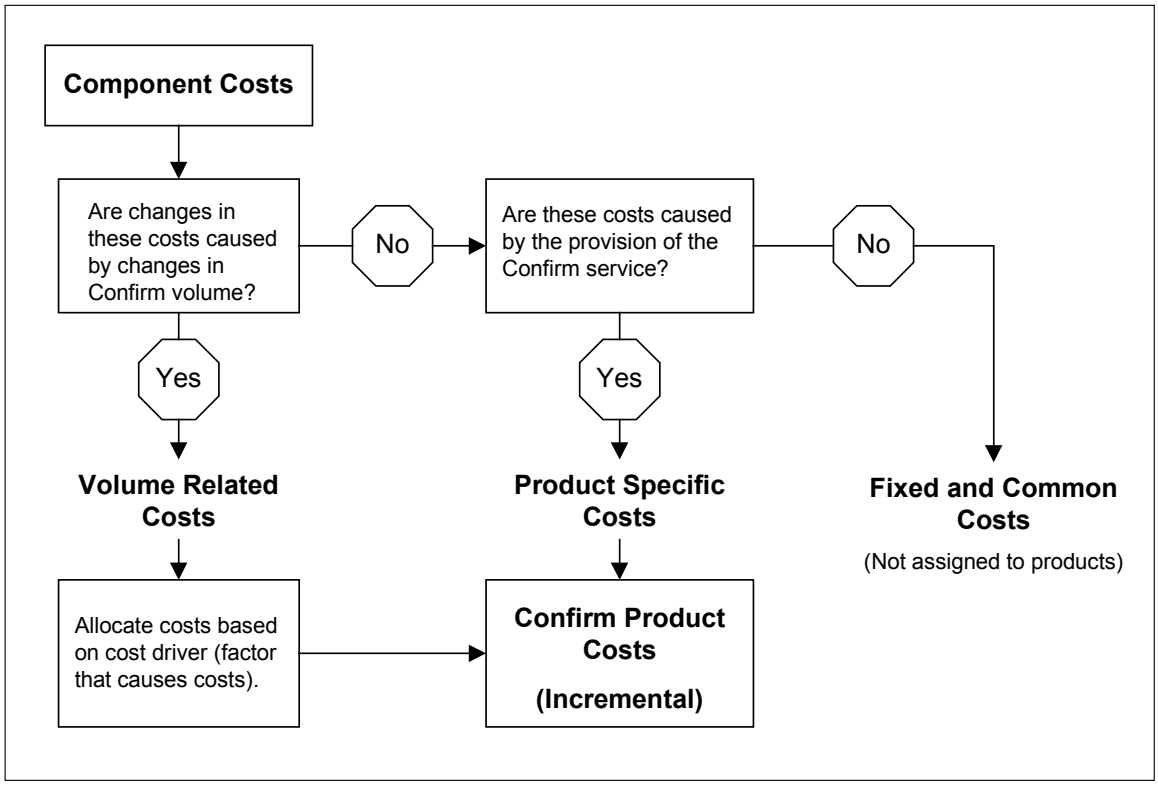

Figure A provides a simplified overview of the decision process for assigning a generic component's costs to individual products. I applied this decision process to Confirm®'s cost components. If changes in a portion of the costs for a component were caused by changes in volume, then I classified that portion of the component as volume variable. If a cost was not caused by changes in volume, but was caused by the provision of Confirm®, then I classified it as product-specific.

If costs are not caused by a specific product and do not change when the product's volume changes, then they are fixed and common costs that are not attributed to Confirm®. At every step of the cost development process, cost causality is the critical determinant for allocation to Confirm®.

Step 4: Accumulate costs caused by Confirm® across cost pools and calculate relevant unit costs.

In this step, I summed the costs caused by Confirm® across all cost pools to determine Confirm®'s total cost, which was divided by the number of subscriptions to calculate unit costs.

The application of this methodology to specific cost components is detailed in Section V.

V. CONFIRM® COST ANALYSIS BY COST COMPONENT

In this section of my testimony, I describe in detail the development of Confirm® cost estimates for information technology, program support, field support, and marketing.

A. Information Technology Costs

Information technology costs include Confirm® hardware and software purchases as well as system development costs. As described by Witness Kiefer (USPS-T-5), the Confirm® system enables unique identification of mailpieces and their location in the mailstream through the capture of PLANET Codes in addition to POSTNET Codes when mailpieces are scanned in existing bar code sorting mail processing operations. Mailpiece scan data are sent automatically from the data collection server(s) in a given mail processing plant to one of 85 district servers. Scan data for PLANET-coded pieces sent by Confirm® subscribers are transmitted from the district servers to the Confirm® Electronic Post Office (EPO), where the data are aggregated, analyzed, stored, and made available to Confirm® subscribers. Confirm®'s information technology costs are primarily associated with the EPO. A discussion of Confirm®'s use of the Postal Service's information technology infrastructure in the field is included in Subsection C: Field Support Costs (Shared Infrastructure).

Some information technology costs for the Confirm® production system were incurred prior to the full production system going live on October 1, 2001. These costs are relevant to forward-looking decisions because they were incurred to create

an asset used in production. I have capitalized and depreciated all information technology costs (both software/hardware purchases and system development expenditures) incurred to support the full production system. The depreciation associated with relevant information technology costs incurred prior to the launch of the full production system is included when it is within the Test Year period of my Confirm® cost analysis.

I describe my analysis of several types of information technology costs in the subsections below.

1) Hardware and Software Costs Incurred Prior to Full Production System Launch

To determine the Confirm® hardware and software costs incurred prior to the launch of the full production system, I accessed the Postal Service's accounting systems. I consulted with the technology developers to identify those expenditures that support the Confirm® full production system. These include the costs of some assets that first supported the pilot system but were later moved to Eagan, Minnesota to support the full production system. I capitalized these hardware and software assets and depreciated their costs on a five-year straight-line service life schedule beginning in the year of purchase.[4] As discussed below, there were both volume variable and product specific hardware and software costs incurred prior to the launch of the Confirm® full production system.

2) Product Specific Hardware and Software Cost Projections

Product specific hardware and software projections include one-time expenditures needed to support the production system. These costs are akin to the product specific hardware and software costs that were incurred prior to the launch of the full production system. I received specific cost estimates from the system developers, representing final purchases required to complete the Confirm® system. Specifically, web server costs and miscellaneous hardware expenditures were defined and included in my information technology cost projections. I capitalized these hardware and software assets and depreciated their costs on a five-year straight-line service life schedule beginning in the year of purchase.

3) Volume Variable Hardware and Software Cost Projections

Volume variable hardware and software costs will be incurred to scale the Confirm® EPO system capacity to meet projected volume demands. To estimate these scaling costs, I developed projected scan volumes and compared these to existing system capacity to determine the amount of new capacity required, and included the associated costs. The EPO system capacity (in scan data records per day) is based on the number of EPO servers and associated storage and processing capacity. The base EPO system includes two Sun E4500 servers (one application server and one database server) and one terabyte of storage capacity. This configuration yields a scan capacity of 90 million to 100 million scan records per day.

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[4] Straight-line depreciation over five years of mainframe-based or midrange computer-based (server-based) hardware and associated software is consistent with Postal Service depreciation policy.

Adding two additional servers and another terabyte of storage would increase system capacity by 90 million to 100 million scan records per day.[5] Similarly, further increments of 90 million to 100 million scan records per day in capacity could be built into the system by adding two more servers and another terabyte of storage, and so on.

To determine the point at which daily scan volumes could approach system capacity, I estimated the number of daily scan volumes using the number of allotted scans and the respective periods of allocation for each package (Silver, Gold, and Platinum) and any additional scans that might be purchased with their respective estimated period of allocation for each package. For example, I projected daily scans for Silver package subscriptions by multiplying the estimated number of subscriptions by the Silver package scan allotment per subscription to derive total base scans for Silver package subscribers. I then divided total base scans by the number of days over which these scans would be used to calculate average scans per day.[6] Next, I took the estimated number of additional scan packages purchased and multiplied by the number of allocated scans per package to calculate total additional scans. To adjust for additional scan peak load considerations, I used the assumption that all the additional scans would be used in a shorter number of days, since some time has likely elapsed in the subscription period. The sum of average

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[5] System capacity estimates were provided by the system developers. In my cost analysis, I assumed the lower end of the capacity estimate range (90 million scans per day) to be conservative.

[6] Subscription projections are presented by Witness Rothschild (USPS-T-4) in the table entitled "Expected Numbers of Subscriptions, Scans, and Mailer IDs to Be Purchased in 2002." Scan allotments and subscription periods are described in Section II Witness Kiefer's testimony (USPS-T-5).

base scans per day and average additional scans per day produced my total scans per day for Silver package subscriptions. I applied the same methodology to estimate the number of scans associated with Gold package. These Silver and Gold package scan projections are conservatively high because my analysis inherently assumes that all subscribers will use their full allotment of scans as will subscribers who purchase additional scans.

For Platinum package subscriptions, I projected daily scans in each year by multiplying the estimated number of subscriptions in that year by 150 million scans per subscription[7], and dividing the total by the number of days in the subscription period. The assumption of 150 million scans per Platinum subscription translates to about 50 million PLANET-coded mailpieces per subscription per year.[8] This figure is consistent with the mailing patterns of large mailers likely to purchase a Platinum subscription for Confirm®. There is no limit placed on the number of scans allotted to Platinum subscribers and therefore no additional scans will be purchased.

I summed the projected daily scans for each of the three packages to determine total projected daily scans. Historically, mail volumes have not only tended to be seasonable but can also fluctuate based on the day of the week; with this in mind and considering that Confirm® promises near real-time data, I built in a peak load contingency factor to compensate for volume fluctuations before arriving at my final Total Scans per Day. This contingency factor also accounts for likely

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[7] The 150 million scans equals 3 times the maximum number of scans allotted in the Gold package. This is a conservative estimate of a potential upper bound for the yearly number of scans used by a Platinum package subscriber.

[8] Scan data from the Confirm pilot indicated that there was an average of 3.0 scans per piece. 150 million scans divided by 3.0 scans per piece equals 50 million pieces.

fluctuations over time in the number of actual daily scan records and compensates for the assumption used in calculating average daily scans, that scans will be drawn upon evenly over the subscription period.

The next step of my volume variable hardware and software cost analysis was to compare these projected scan volumes over time to system capacity to determine the point(s) at which new capacity would be required. I then identified the cost of that added capacity based on the incremental number of EPOs required.[9]

4) System Development Costs Incurred Prior to Full Production System Launch

To determine the Confirm® system development costs incurred prior to the launch of the full production system, I first identified historical system development costs from the Postal Service's accounting systems. In discussion with the technology developers, I identified those expenditures that support the Confirm® full production system. These included development work begun in Fiscal Year 1999 when technology developers began system development work that supported both the pilot system and the full production system. I capitalized these system development expenditures and depreciated their costs on a five-year straight-line service life schedule beginning in the years of the expenditures.

[9] The cost of each additional 90 million scans per day in capacity is equal to the cost of two Sun E4500 servers ($323,825 based on a Postal Service delivery order from Sun Microsystems Federal, Inc.) and one terabyte of storage ($349,172 based on a Postal Service delivery order from Storage Technology Corporation). I did not inflate these cost estimates in future years because the improvements in capacity/quality of technology purchases tend to outpace price increases.

5) System Development Cost Projections

Post-launch Confirm® system development is continuing to provide enhancements to the full production system. I projected these additional development costs based on discussion with the system developers regarding system requirements and enhancement estimates as well as Confirm® capital budget limitations. I capitalized these projected system development expenditures and depreciated their costs on a five-year straight-line service life schedule beginning in the years of the expenditures.

6) Treatment of Information Technology Cost Pools as Volume Variable vs. Product Specific

Information technology costs for Confirm® include both product specific and volume variable cost pools. Product specific hardware and software cost pools include web server and miscellaneous hardware purchases required to support system functionality regardless of the user count. Similarly, only some contractor support is driven by volume, while other such costs are instead driven solely by functional requirements. Therefore, I classified development costs not driven by volume as product specific.

The capacity of the base EPO (including associated servers, storage, and database software) was scaled based on the expectation of future volume. Furthermore, increases in volume beyond base capacity necessitate EPO scaling,

causing additional costs driven by volume. I have classified these costs as volume variable.[10]

7) Costs Not Supporting the Confirm® Full Production System

As described in Section III of this testimony, I analyzed the causal relationship between provision of Confirm® and costs for each cost component associated with it. As discussed by Witness Bakshi (USPS-T-1, Section III), the Postal Service is leveraging Confirm® for internal service performance measurement and troubleshooting through the Confirm® Mail Operations Reporting (CMOR) tool. This internal effort has resulted in hardware/software costs and system development costs to the Postal Service. A separate EPO is used for CMOR to house and analyze scan data for service performance measurement purposes. Though these costs bear some relationship to Confirm®, they are not caused by Confirm® and do not support the production system that serves Confirm® customers. For this reason, I do not include CMOR costs among the information technology costs of Confirm®.

There were additional information technology costs incurred by the Postal Service during the Confirm® pilot period that do not support the Confirm® full production system. Specifically, web development costs were incurred for a Confirm®-related website that will in no way support the production system for Confirm®. Rather, a new Confirm® website is being developed from scratch to support the production system. The costs of this previous web development effort

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[10] The volume-cost function for these EPO hardware and software costs is a stepped function in which cost varies with large increases in volume. This type of stepped function for information

are sunk. No asset was created and therefore no costs are included in my forward-looking cost analysis.

B. Program Support Costs

Program support costs include costs of dedicated program labor and contractor support.

1) Program Labor Costs

My testimony assumes that the Confirm® program will require a specialist performing customer interface and marketing activities.[11] Labor costs for this individual dedicated to Confirm® are included in my Confirm® costs in accordance with cost causation principles.

2) Contractor Support Costs

The Postal Service is likely to require ongoing consulting support for Confirm®. Contractor support costs include consulting costs for strategy, product development and positioning, market research, business planning, etc. Specific cost estimates were provided by program managers based on business requirements and budget constraints.[12]

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technology costs is typical of technology-enabled services. Though costs do not vary at the margin (with each additional scan or customer), they are long-run volume variable.

[11] USPS level EAS-23 assumed. Salary based on USPS National Average Labor Rates report adjusted for 2.1% annual inflation (USPS standard inflation factor for USPS labor costs).

C. Field Support Costs

Confirm® will require some support from Postal Service field operations (e.g., helpdesk support and field technology support). In this subsection of my testimony I describe field support costs caused by Confirm®.

1) Customer Service Helpdesk Costs

The Postal Service's National Customer Service Center (NCSC) will provide dedicated customer service support for Confirm®. Significant support is necessary during the customer set-up process (e.g., enrolling subscribers and setting up customer accounts, testing and logging mail pieces to ensure that subscribers can print PLANET Codes properly, responding to inquiries from customers during the application process and in learning to download and use Confirm® data, setting up customer user IDs on the EPO, etc.). In addition, a lesser degree of ongoing customer support will be necessary to respond to *ad hoc* telephone inquiries of customers regarding their accounts and technology-related troubleshooting.

I developed my projections of Confirm® customer service helpdesk costs in TY 2003 based on a service level agreement between the NCSC and the Confirm® program for FY 2002. In that agreement, FY 2002 customer service costs were identified by the NCSC (and will be charged to Confirm®) based on NCSC's understanding of the requirements and subscriber levels. Because the agreement includes support for Postal Service use of Confirm® for internal service performance

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[12] FY2002 costs were inflated to TY 2003 by applying the standard USPS annual inflation factor for non-USPS labor costs (3.2%).

measurement, I adjusted the FY 2002 service level agreement costs to exclude the costs of this internal CMOR support, as they are not attributable to Confirm® offered to customers.

Based on discussion with NCSC helpdesk experts, I projected helpdesk costs for TY 2003 based on the FY 2002 service level agreement costs (provided by the NCSC) adjusted for the estimated volume of subscribers presented in Witness Kiefer's testimony. I defined these helpdesk costs as volume variable because they are driven by the number of subscribers.

2) Shared Infrastructure

In analyzing the technology and production processes for Confirm®, I identified the resources used in each step of production and delivery of Confirm®. As described in Subsection A of this section (Information Technology Costs), Confirm® makes use of the Postal Service's existing information technology infrastructure. Specifically, barcode sorters capture PLANET Codes during mail processing and PLANET Code data are transmitted to data collection servers and district servers before being accessed by the Confirm® EPO. As explained by Witness Bakshi (USPS-T-1) in Section V of his testimony, Confirm® data collection is a passive process that uses existing mail processing infrastructure.

I analyzed the causal relationship between Confirm® and the costs of shared field resources and found that the latter do not vary with the addition of Confirm®. Because Confirm® does not cause these costs, I have excluded them from analysis. The reasons for this conclusion are explained further below.

These pieces of shared equipment are necessary for normal mail processing operations and have been in place in the field for years. Barcode sorters scan mail pieces and capture POSTNET Code data for every mail piece containing a POSTNET Code. POSTNET Code scan data are amassed by data collection servers and transmitted to district servers *regardless of Confirm®*. These resources are caused by the necessity of efficient mail processing, and their costs are attributed to mail classes accordingly. According to operations engineers, the capture and transmission of PLANET Code data for Confirm® uses a trivial portion of pre-existing resources (server throughput, capacity, and data transmission capacity). The capture of PLANET Code data does not necessitate further scaling of servers or transmission lines. Rather, this field equipment infrastructure is upgraded according to established maintenance timelines and other functional requirements. The costs of this existing infrastructure are not changed by Confirm®'s piggybacking on it. Because no causal relationship exists between Confirm® and shared equipment infrastructure, I have not attributed any such costs to Confirm®.

There are, however, some costs related to the infrastructure that are caused by Confirm® and are therefore attributed to it. Namely, Confirm® requires minor programming adjustments to enable the mail processing equipment to capture PLANET Code scan data and to pass that data to the EPO. Specifically, a minimal amount of code is required to instruct barcode sorters to capture PLANET Codes in addition to the POSTNET Codes used in normal mail processing. This computer code is caused by Confirm® but its "installation" is not – it is included in the pre-existing update cycles for barcode sorters.

In addition, a software program was written to enable the district servers to pass PLANET Code data for Confirm® subscribers to the EPO. This program was "pushed" (installed remotely) to all 85 district servers electronically. The costs of these programming requirements (and ongoing updates) are caused by Confirm® and are included in my analysis among field technology costs.

3) Field Technology Costs

Ongoing Confirm® field technology support (e.g., technical call center, software deployment, telecommunication maintenance, ongoing system support, system certification, etc.) will be necessary to provide maintenance and support to the Confirm® full production system. These costs are driven by time and functional requirements, not by volume. For this reason, I have classified them as product specific. I projected these maintenance and support costs based on budget constraints and discussion with the system developers regarding system requirements.

D. Marketing Costs

The Postal Service will require ongoing marketing support services to promote Confirm® to mailers. These marketing expenditures will consist of costs for informational materials, promotional items (e.g., Confirm® CD-ROMs and promotional print materials) and development of presentations for customers. Test Year costs are based on specific cost estimates provided by program managers.

In addition, advertising costs will be incurred in support of Confirm®. I estimated Test Year Confirm® advertising costs based on the budgeted funding for Confirm®-specific advertising. These costs are product-specific to Confirm®.