

United States Postal Service

Intelligent Mail Vision



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UNITED STATES POSTAL SERVICE

Intelligent Mail Vision

EXECUTIVE SUMMARY

CHALLENGES

The United States Postal Service (USPS) is facing tremendous challenges brought on by fundamental changes in technology and commerce. The Postal Service's five-year strategic plan, *Vision 2013*, lists the following trends that are reshaping the delivery services marketplace.

- **Economic uncertainty.** Customers are affected by the economic slowdown and are challenged by rising costs.
- **A Different mail mix.** Advertising has taken hold as the largest mail segment. It's price being more elastic, mail volume volatility will increase.
- **A Business model in need of change.** As the world changes, so too must the business model that drives the Postal Service.
- **Potential regulatory and legislative changes.** Ongoing dialogue with Congress will impact regulations and service obligations.

Increasingly the Postal Service is competing in an environment where information *about* the mail is valued as equal importance to the mail itself. Provisioning and utilizing information about the mail has become a controlling factor in viably remaining in the marketplace as anything other than the carrier of last resort. Postal Service competitors have built their businesses in part by recognizing and accommodating this shift in mailer requirements.

Over the last few years, the Postal Service has been providing information about mail to its customers in product offerings such as Express Mail, Delivery Confirmation, and Confirm®. These offerings have been well received.

Nevertheless, today's Postal Service remains disadvantaged from its competitors by its marginal ability to leverage real-time and near real-time information about mail. The Postal Service collects hundreds of terabytes of data, yet only a small fraction of that data can be accessed and leveraged by postal employees to favorably impact how mail is processed and delivered, and by customers to gain greater visibility into the mail stream. The challenge is urgent and clear—the Postal Service must foster an *Intelligent Mail* system to convey leveragable information about mail in time for postal employees and customers to favorably influence their operating environments.

VISION

In 2003, the Postal Service drafted the *Intelligent Mail Corporate Plan*, which described the vision for Intelligent Mail: “place an information-rich code on all mail, aggregates of mail, and business forms, enabling end-to-end visibility into the mail stream.” Recent progress is making this vision a reality. Intelligent Mail barcodes for mail pieces and aggregates have been implemented and the enabling infrastructure has been deployed to support expanded visibility into the postal network. As mailers adopt Full-Service, the data landscape will be teeming with information about the mail. To build on the vision created in 2003, the focus of Intelligent Mail going forward is to

“Enhance the value of mail by using information and insight from the mail to deliver increased customer value and drive operational efficiency.”

BENEFITS

As the Postal Service continues on its journey towards intelligent mail, benefits will mount:

- **Revenue growth and retention** as a result of making products more attractive in the marketplace by leveraging information to improve service performance and provide valued-added services.
- **Reduced operating costs** through better network and operations usage of information about mail, and increased mail processing automation using standardized coding.
- **Reduced investment costs** through standardization and integration of coding structure, data acquisition, communications, and storage infrastructure.
- **Enhanced revenue accuracy** through thorough verification of postage payment and fulfillment of requirements for rate categories.
- **Enhanced mail security** by providing forensic evidence for investigation, emergency response, and emergency preparedness, and deterring criminal activities involving mail, while ensuring the traditional privacy aspects of mail.

2010 ACCOMPLISHMENTS

With the release of Full Service in mid-May 2009, the Postal Service became the first postal organization in the world to offer national Intelligent Mail®. Subsequent releases in November 2009 and March 2010 added new electronic mailing data options to begin to use piece-level data and deployed commercial mail measurement using Full Service mailings.

Adoption has been rapid since the release of Full Service across several measures. Previous to Full Service there was limited use of electronic submissions to create postage statements. Since May 2009,

- total postage processed through electronic documentation is in excess of \$8.3 billion with current weekly revenue of more than \$300 million (over 600% growth);
- over 33 billion mail pieces have been submitted through electronic documentation with a current weekly rate of over 800 million pieces (over 600% growth);
- there are over 500 mail preparers submitting electronic documentation with a backlog of mailers working through the certification process (over 700% growth);
- over 20 billion mail pieces have been submitted as Full Service with a current weekly rate of over 600 million pieces and \$200 million in postage.

Based on adoption alone, Full Service has been one of the most successful new products USPS has ever launched. Not only have large mailing companies joined the Full Service program, but a large growth was seen in smaller companies signing up to the service. Cost is one driver here but the benefits of electronic data exchange and the information intelligence is likely to be a stronger explanation.

The program has exceeded expectations, especially with respect to this noted take up from smaller companies. Full Service was primarily customer focused and the growth amongst larger organizations was expected but interest from smaller companies has been somewhat unexpected and highly positive and encouraging. Naturally, the

discounted offer at the outset of the program was an incentive to many companies. However, the value of the program—greater insight into mailing activities and business intelligence enabling analytics to ease decision making—has meant that many companies can see the benefits in quality that will help them achieve better business outcomes.

From a system performance standpoint the program is also a tremendous success with nearly 99% of files processed in less than 20 minutes. Most mailings are processed even faster with over 86% processed in five minutes or less. This includes client validation, file transmission, and server side processing to generate the postage statement. This significantly improves the performance of the legacy file submission process for the most common mailings. These enhancements also enable the submission of very large mailings that were not supported by the previous solutions. The largest mailing processed to date exceeded 9 million pieces and 2 GB in combined file size. Even files of this magnitude are typically processed in under two hours.

Much has also been accomplished to further the strategies outlined for Intelligent Mail. Some of those highlights include:

- **Service Measurement:** enhancements were completed to the Full Service platform to deliver Full Service mailings to the commercial mail external reporting system for the service measurement reports provided to the PRC.
- **Intelligent Mail Barcode “Apps”:** enabled the creation of new products and services called Intelligent Mail barcode “apps” that allow customers to define uses for Intelligent Mail that are implemented by the Postal Service.
- **Operational Insight:** developed prototype operational insight reports using the decennial Census mail to provide detailed insight into how individual processing facilities handled the Census mailing and where operational improvements could be made to make processing more efficient. Broader, production reports will be released in late 2010.
- **Mail Quality Reports:** new reports were developed to give customers insight into the quality of their Full Service mailings. These reports allow mailers to view error details and use that data to pro-actively correct mail preparation issues.

CHAPTER 1: INTRODUCTION

CHALLENGES

The United States Postal Service (USPS) is facing tremendous challenges brought on by fundamental changes in technology and commerce. *Vision 2013*, the Postal Service's five-year strategic plan, listed the following challenges that are reshaping the delivery services marketplace.

Economic uncertainty. Customers are affected by the economic slowdown and are challenged by rising costs.

A Different mail mix. Advertising has taken hold as the largest mail segment. Price being more elastic, mail volume volatility will increase.

A Business model in need of change. As the world changes, so too must the business model that drives the Postal Service.

Potential regulatory and legislative changes. Ongoing dialogue with Congress will impact regulations and service obligations.

Increasingly the Postal Service is competing in an environment where information *about* the mail is valued as equal importance to the mail itself. Provisioning and utilizing information about the mail will become a controlling factor in viably remaining in the marketplace as anything other than the carrier of last resort. USPS competitors have built their businesses in part by recognizing and accommodating this shift in mailer requirements.

Over the last few years, the Postal Service has been providing information about mail to its customers in product offerings such as Express Mail, Delivery Confirmation, Address Change Service, and Confirm®. These offerings have been well received by customers. Many customers have articulated on how information about mail has helped their businesses, attesting to the value of information. (See testimonials in the box on the following page.)

Nevertheless, today's Postal Service remains differentiated from its competitors by its marginal ability to leverage real-time and near real-time information about mail. The Postal Service collects hundreds of terabytes of data, yet only a small fraction of that data can be accessed and leveraged by postal employees to favorably impact how mail is processed and delivered, and by customers to gain greater visibility into the mail stream. Postal employees must adapt to an environment where the role of information is no longer merely to facilitate reporting of past events. On the contrary, information will be made available to postal employees in near real-time, and framed in a context that imparts new, immediate, and actionable knowledge to postal employees regarding aspects of mail movement, logistics, and staffing. The challenge is urgent and clear—the Postal Service must create an Intelligent Mail system to enable decision-making in time frames that influence mail processing and delivery and drives value to mail. The Postal Service has recognized this challenge and is reacting in an aggressive proactive manner. The *Intelligent Mail Vision* defines the path to meet this challenge.

Testimonials from Mailers

"We have found the new barcode and technology to be spectacular, adding great value to mail through enhanced piece tracking and address quality services." - Dave Lewis, Trackmymail, Inc.

"PSI has consistently supported the efforts of the USPS to develop and implement Intelligent Mail Barcode technology...The increased visibility, track and trace, quality improvement, and electronic information exchange are central to PSI's strategy and we believe they will benefit our mutual clients and add value to the mail." - Jay Oxtan, Pitney Bowes PSI Presort Services

VALUE OF INFORMATION

The Postal Service possesses massive amounts of data. However, data by itself is seldom actionable or even very informative. It is only after data is understood, linked to metrics, and made relevant to defined business needs that it becomes informative. At that point, data is converted to "information" and becomes valuable to the enterprise and customers. Even then, unless information is made available in a timely manner, its value can be greatly diminished and the information only valuable in a historical context. Historical information allows for a report card of process performance, and perhaps provides clues to high-level actions needed to improve the process. However, historical information provides little help to customers interested in the status and end result of their mailing at a given point in time—or to postal managers who must make informed real-time decisions that facilitate meeting service standards and reducing costs.

The Postal Service offers some actionable information to its employees and customers through programs such as Confirm® and Delivery Confirmation. However, postal customers demand contextualized information sooner, and postal operating and delivery environments require the same. Both insist that the wealth of data and information be presented as *knowledge* for real-time decisioning so they can alter potentially unfavorable outcomes in a timely manner. Postal competitors already work with this type of information at their fingertips. So must the Postal Service.

The term "Intelligent Mail" refers to the capture and conveyance of information about each mail piece and aggregate of mail pieces (unit loads) in time for postal workers and customers to favorably influence their respective operations. Customers use this information in a variety of ways depending on which part in the supply chain they plan.

Mail owners, for instance, can use Intelligent Mail to evaluate the performance of their mail and the suppliers they have hired to prepare the mail. For example, Start-the-Clock information made available as part of Full Service can help evaluate compliance with service level agreements and provide insight into where problems may exist in the supply chain. Piece level data provides even more value, giving a detailed understanding of when mail was received or what mail is coming back from their customers.

Mail service providers (MSP) also find value in the information produced by Intelligent Mail. Detailed quality metrics from Full Service provide insight into how the mail was prepared and where to focus quality improvement efforts. For example, MSPs can use Mail Quality reports to identify when containers were transported to the incorrect Postal Service facility or when duplicate barcodes have been created. Using the insight provided by these reports allows MSPs to work collaboratively with the Postal Service to improve the overall quality of mail.

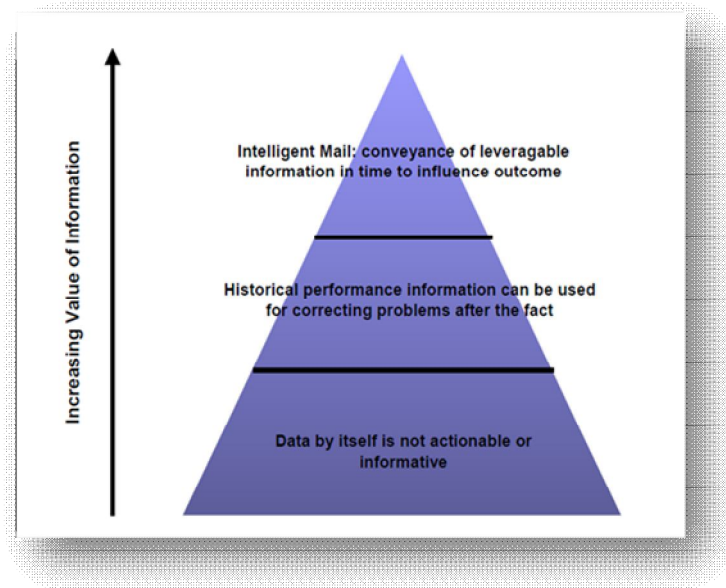


FIGURE 1 – INCREASING INFORMATION VALUE

ABOUT THIS PLAN

The Postal Service recognizes the requirement for *knowledge* to govern its future operating environments. Accordingly, the Intelligent Mail and Address Quality organization was created to identify and shepherd the efforts required to move the enterprise from an organization rich in data but limited in information, to one with mail stream instrumentation. With real-time knowledge, postal employees and customers can make enlightened decisions about current operational status and exploit future options.

This *Intelligent Mail Vision* presents the Postal Service view on the vision and strategies required to achieve Intelligent Mail. Material covered in each chapter is as follows:

- Chapter 2: Intelligent Mail vision and benefits
- Chapter 3: Original strategies that made Intelligent Mail a reality
- Chapter 4: New strategies that will continue to add to the value of Intelligent Mail

CHAPTER 2: VISION AND BENEFITS

VISION

The Postal Service recognizes the need to provide customers with information about mail, and use the same information to better manage its operations. In other words, the Postal Service must *capitalize on the value of information about mail*. The following vision statement describes where the Postal Service needs to be.

Vision Statement

Enhance the value of mail by using information and insight from the mail to deliver increased customer value and drive operational efficiency.

Through the Full-Service program improvements, the Postal Service and its customers are intelligently coding automation mail and aggregates of mail. The coding structure is information-rich and machine-readable, and codes are read passively and automatically as part of existing processes. This has been accomplished without compromising the privacy of mail.

Through the Intelligent Mail barcode, the number of disparate codes on mail pieces and the real estate they occupy have been minimized, consistent with sound business practices and customer needs. Consideration has been given to the cost of generating and reading these codes for the Postal Service and its customers. The data acquisition and communications infrastructure to acquire, transmit, and store information about mail has been streamlined and integrated, and software applications have been put in place to use the end-to-end tracking information to benefit the Postal Service and its customers.

While the complete realization of benefits associated to intelligent mail may be years away, the Postal Service has made significant progress towards uniquely identifying mail and aggregates, developing and deploying infrastructure, and enhancing address quality. (These strategies are presented in greater detail in Chapter 3.) Looking forward, the Postal Service will focus on leveraging intelligent mail to improve mail performance, create new products and services, optimize operations, and drive value to the customer experience.

BENEFITS

As the Postal Service moves toward the end goal of this *Vision*, the following benefits will be realized:

- **Revenue growth** as a result of making USPS products more attractive in the marketplace by leveraging information to improve service performance and provide valued-added services.
- **Reduced operating costs** through better network and operations usage of information about mail, and increased mail processing automation using standardized coding.
- **Reduced investment costs** through standardization and integration of coding structure, data acquisition, communications and storage infrastructure.

- **Enhanced revenue accuracy** through thorough verification of postage payment and fulfillment of requirements for rate categories.
- **Enhanced mail security** by providing forensic evidence for investigation, emergency response, emergency preparedness, and deterring criminal activities involving mail, while ensuring the traditional privacy aspects of mail.

These benefits are further described in the following sections.

REVENUE GROWTH

The Postal Service can grow revenue in the following ways:

- Offer new products and services
- Offer revenue-generating add-on services to existing products and services
- Capture a larger market share of existing services by improving products and enhancing the value of mail as an efficient and effective medium of communication

Intelligent Mail offers opportunities to spawn add-on services, such as Intelligent Mail Barcode Applications (IMb “Apps”) which allow mailers to define a service using Intelligent Mail. The first of these, a greeting card with pre-paid postage, was created for Hallmark and allows them to sell greeting cards with postage already applied so the consumer can simply mail the card without having to track down a stamp.

In many ways, there are even greater opportunities to benefit the mailing industry by enhancing existing postal products. Existing postal products will more competitive by leveraging information to reduce costs of services (see the following section), to improve service performance and overall effectiveness, to reduce the costs to mailers participating in special services, and to reduce the costs of other business processes for the mail user.

The same tracking information given to mailers will be used by the Postal Service to manage its process and delivery operations to make delivery date sensitive materials more accurate and predictable. This enhances the effectiveness and value of direct mail advertising, so the Postal Service will stand to gain a larger share of the total advertising market. In addition, the provision of electronic tracking information makes it possible for mailers to more easily understand the ways in which their customers respond to a mailing. This increased information about business transactions can be used to better target communications with their customers, to better forecast the response to a particular solicitation, and to project cash flow and sales responses more accurately.

Improved address quality helps ensure that business and personal communications of all types are delivered to the desired recipient. This improves and sustains public confidence in the accuracy of mail delivery. It also results in improved responses and less waste in preparing and sending mail pieces to individuals who are not interested.

The integration of coding information achieved in pursuing the OneCode vision reduces the amount of space on the mail piece required for USPS sorting, tracking, and special service information. This allows mailers more freedom to design mail pieces that are attractive to consumers. An increase in the open-and-read rate by mail recipients will in all likelihood increase the response rate, leading to increased value of mail as a communications medium.

Intelligent Mail has the potential to simplify a number of processes associated with preparing and inducting mail, enabling mailers to reduce their overall costs of mailing. For example, by developing automated methods for handling special service requests, the Postal Service should be able to reduce or eliminate the manual processes that are frequently required for mailers to purchase special services. Access to services for undeliverable-as-addressed

(UAA) mail such as forwarding, return to sender, and address correction, are easier since being incorporation into the OneCode vision.

Finally, Intelligent Mail can be leveraged by customers to reduce the costs of other associated business processes. Information about when mail will be delivered is used to help make staffing decisions at call centers and stores. The knowledge that “the check is in the mail” can eliminate costly actions such as service termination for nonpayment. Intelligent Mail will allow mailers to improve the handling of returns and other mail coming back to business mailers from their customers.

The following diagram shows how these drivers interact to increase the value of mail.

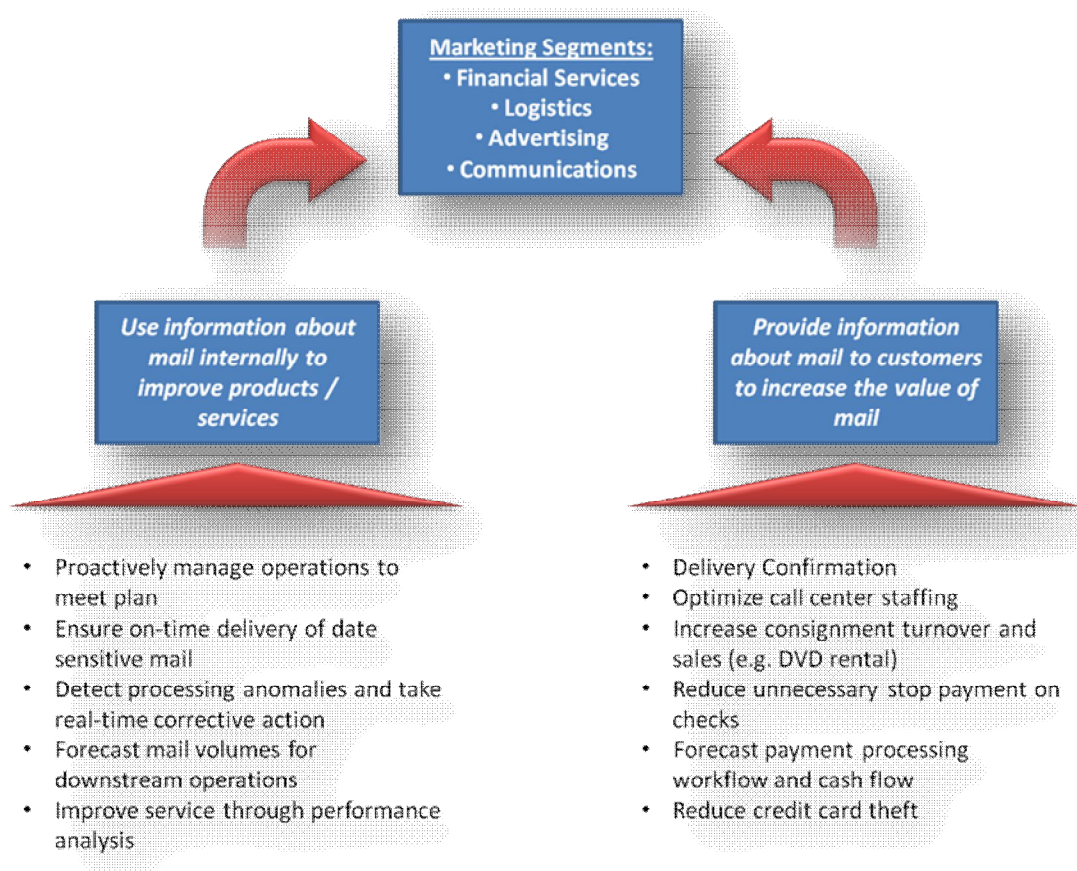


FIGURE 2 - MAIL VALUE LEVERS

The Postal Service competes for market share primarily in four markets: Financial Services (bills, payments), Package Services (expedited, ground), Advertising (direct mail), and Communications (personal, business). Gaining market share within these segments presents the greatest opportunity to grow revenue. In 2008, advertisers spent \$60 billion on direct mail, which represented 22 percent of all advertising spending in the United States. Spend on direct mail grew 5.3% from 2005 to 2008 while spending on advertising as a whole fell by 1.9%. Only spending on Internet grew more than direct mail over the same period. By continuing to grow market share at this pace, in 2013

the Postal Service would receive 24% of the advertising market spend. If we had had a 24 percent in 2008, this would have produced revenues of \$65 billion or \$5 billion over what we actually had.

REDUCED OPERATING COSTS

Information about mail can also help in reducing the Postal Service's operating costs through better network and operations usage of information about mail.

Transportation Costs

The Postal Service spent approximately \$1.69 billion in 2008 on transportation.¹ Mail tracking can provide information to reduce transportation costs by:

- reducing the number of emergency ground trips resulting from dispatch-ready containers that did not make it onto designated transportation
- increasing trailer utilization by using accurate profile of dispatch-ready mail to conduct periodic review and adjustment of the scheduling and routing of HCR trips
- diverting more mail volume from air to surface transportation through better management of processing operations to maximize mail that can be dispatched earlier
- using high-quality tracking information to hold air carrier accountable for their performance commitment
- reducing the volume of return-to-sender mail will also reduce the associated transportation costs

Reduced Cost of Poor Quality

By capturing unique identifiers on trays and containers as they are nested, the information can be used in real time to detect and correct errors in mail handling. Examples of such errors include:

- trays placed into incorrect containers
- containers dispatched to the incorrect transportation units
- containers left behind on docks
- containers left behind in trailers
- containers unloaded at the incorrect facility
- mail processed in incorrect operations or on incorrect sort schemes

Mail Transport Equipment Costs

Visibility into nesting relationships of piece to container provides higher visibility of mail transport equipment assets for better inventory control and re-deployment. Yearly purchases of mail transport equipment can be reduced.

¹ Comprehensive Statement on Postal Operations 2008

Over the last few decades, the Postal Service has successfully implemented automation programs that have significantly reduced labor costs by automating letter and flat sortation. Significant progress has been made in reading the POSTNET and ID Tag barcodes on letter mail. This same effort now needs to take place to reduce costs in mail forwarding/return, parcel distribution, material handling, and bundle sortation. Standardization and machine-friendly coding symbologies offer significant opportunities to drive down mail processing costs.

For example, if all packages and bundles are coded with routing information, systems such as the Small Parcel and Bundle Sorter (SPBS), the Automated Package Processing System (APPS), and the Singulation Scan Induction Unit (SSIU) can (or can be modified to) eliminate manual keying operations. As another example, if alphanumeric characters printed in the address block for Address Change Service (ACS) are presented as barcoded information instead, the costs of providing ACS will be significantly reduced.

REDUCED INVESTMENT COSTS

A key strategy of Intelligent Mail is the development and establishment of a common infrastructure to support corporate needs. Examples of common infrastructure components include:

- Code application devices
- Data capture devices
- Data communications networks
- Data storage systems

Infrastructure investments will take into consideration total corporate needs, rather than the needs of one or a few stovepipe functions, hence lowering the net investment cost of infrastructure. An enterprise approach to infrastructure will:

- Eliminate redundancies of supporting and investing in multiple similar systems.
- Leverage economies of scale through making national investments.
- Incorporate flexibility so new program needs can easily be added, thus reducing or eliminating the infrastructure burden on individual programs

An example of how improved infrastructure can reduce investment costs is evident in the Mail Processing Infrastructure (MPI) program, which will upgrade the computer wiring in mail processing plants. In the last few years, 11 plants have been upgraded, because their current wiring was overtaxed, at a total cost of \$6.6 million. Cost estimates for a national purchase show a price tag reduction of over 10 percent from economies of scale.

Another kind of cost is incurred when new equipment includes its own special-purpose wiring network. In the five years prior to 2003, \$19 million was spent for single-purpose wiring, in lieu of a systems approach to upgrade the overall plant wiring. If the stovepipe approach had continued, an estimated \$25 million would have been required for special-purpose wiring infrastructure for pending programs. An additional \$25 million would have been required for anticipated future programs. These expenditures would not have solved any of the current network problems and would have further degraded performance for existing applications. Furthermore, the Postal Service would still need to upgrade the current networks as they fail. Investments such as the MPI program are not only necessary to ensure the success of intelligent mail, but they also make good business sense.

ENHANCED REVENUE ACCURACY

Intelligent Mail systems will allow automated verification of code-based postage payment, such as the Information Based Indicia (IBI), to ensure that the Postal Service receives appropriate postage based on the actual characteristics of the mailing.

For mail entered by large mailers, Intelligent Mail systems can take postage payment verification a step beyond today's capabilities. Today, at the origin acceptance unit, a small sample of mail is drawn from the mailing and tested for readability. If the mail passes the test, the mailing is accepted. If in reality the full mailing does not meet the presort and readability characteristics for the postage rate claimed, the Postal Service is unlikely to find out, and even more unlikely to recover the postage underpayment. The function of postage verification should not be limited to one corner of the building, but rather extended to the entire process. However, making the acceptance process more rigorous without introducing supporting technology would grind the acceptance process to a halt. Intelligent Mail, capable of unique identification and tracking of containers, will allow for more extensive verification of correct drop shipment location and quantity. Uniquely identifying trays and pieces through scans gathered by mail processing equipment will facilitate verification of presort level and address quality.

ENHANCED MAIL SECURITY WITHOUT COMPROMISING PRIVACY

Intelligent Mail enables tracing of mail and aggregates through the mail system, which provides forensic evidence to facilitate incident investigation and emergency response. In cases in which mail is used to carry out malicious acts such as the conveyance of bio-hazard or explosive materials, Intelligent Mail will make it easier to identify the origin facility, establish the path of travel, and identify mail pieces that were near the piece in question as it made its way through the system.

Mail visibility also facilitates investigation of mail theft by identifying where theft occurs. Financial institutions have used Confirm® to reduce the costs associated with credit card fraud. If a mail piece carrying credit cards is not scanned by a certain date, the cards are presumed stolen and are automatically canceled. This reduces the possibility of credit card and identity theft, which is a major concern among consumers.

For some mail categories, the Postal Service requires the identity of the sender to be coded on the mail piece in order to enhance mail security and revenue accuracy. Intelligent Mail must balance and integrate privacy features. The Postal Service has a long tradition of protecting the privacy and security of mail. That will not change. The Postal Service has developed policies to protect intelligent mail based on the Privacy Act. These protections govern all aspects of data management practices, including how data is collected, safeguarded, and shared. Moreover, the Postal Service will not have access to any mailer-assigned code, except for security purposes. In those instances, the data will be managed under the standing privacy policies. In addition, many mailers who use Intelligent Mail, such as financial institutions, also provide privacy protection to their customers in accordance with privacy laws and policies that they follow.

Testimonials from Mailers

"We are looking forward to the implementation of the IMB and we believe it will have significant benefit to our customers." - Brian Quist, Kent Communications

CHAPTER 3: ORIGINAL STRATEGIES

This chapter presents the original key strategies for achieving the Intelligent Mail vision.

The promise of Intelligent Mail stands on three tenets:

1. Availability of high-quality information (including address information) about each mail piece, as well as aggregate information, at a point where the information is potentially actionable
2. Appropriate infrastructure to accommodate the capture and exchange of the information in sufficient time for action by the user
3. Business applications that capture and present the information, execute the desires of the user, and provide mechanisms for real-time monitoring of operational status by all interested and appropriate parties

In 2003, the *Intelligent Mail Corporate Plan* focused on the following:

- Uniquely identify mail and aggregates for end-to-end tracking
- Develop and deploy enabling infrastructure
- Enhance address quality

Each strategy from 2003 can be found below along with an update on progress to date.

STRATEGY 1: UNIQUELY IDENTIFY MAIL AND AGGREGATES

- OneCode Vision -

Create one unique distribution code per mail type that will also encompass or point to all relevant services.

All mail pieces and aggregates of mail will be uniquely identified with a code to enable end-to-end process tracking. Unique identification of mail pieces and aggregates is key to achieving the benefits of Intelligent Mail by providing the ability to gain full visibility of mail and aggregates.

A key element of Intelligent Mail is the **OneCode Vision**, which refers to creating one distribution code per mail type and aggregate that will also encompass or point to all relevant services—such as address change request and delivery confirmation. OneCode may take years to achieve. In the meantime, the Postal Service will minimize the number of codes used through standardization and consolidation.

A disciplined approach is needed to define codes. The Postal Service will adopt the following set of principles for defining, standardizing, and consolidating codes:

- Satisfy the customer and postal information needs. The data elements within the code, in conjunction with other data pointed to by the code, must provide useful information to meet current and potential future business needs of the Postal Service and its customers.
- Ensure global uniqueness. The codes must facilitate doing business with strategic partners, both domestic and international. Codes must be globally unique and take advantage of existing international coding standards, if possible.
- Minimize the number of different codes on a mail piece or aggregate. Ideally, there should be only *one, all-encompassing code* per mail type.
- Permit passive data acquisition. The codes must allow scanning to be a by-product of the normal processing system, rather than a separate person-driven action.
- Consider impacts on and constraints imposed by infrastructure. Infrastructure, capabilities, cost, and opportunity must be balanced to create a win-win for all entities.

CODE CONTENT

The mail system becomes *intelligent* when information about individual mail pieces, mail aggregates, and segments of the mail stream is provided to users or systems to enable proactive decisions that favorably influence business performance and delivery outcomes. This information can either be embedded within the unique codes themselves or reside in a database record that the unique code points to. The code technology chosen for any given purpose must represent a balance between the information that needs to be conveyed, the infrastructure available to all parties associated with printing and processing the code, and the end-to-end economics of the alternatives.

For each mail piece and aggregate, the Postal Service must decide upon the information that is to be associated with that mail piece and conveyed to downstream operations and monitoring systems. Some data elements will be required for processing and delivery of expected customer services. Other data elements will be desirable but not essential. After determining the information requirements, an analysis of the sometimes-competing factors involved in reconciling code content versus code technology should lead to the best code choice.

The amount of information that a code should convey must be addressed each time a code is needed. On one extreme, the code can simply be a “license plate,” i.e., a unique ID that may not directly contain any data that is needed for processing the item that carries that code. Instead, the code represents a pointer to a database in which pertinent information about the item carrying that code is stored. This approach allows a large amount of information to be associated with a given code, but without the requirement that the code itself be unduly large or complex. On the other extreme, the code can be “self-contained,” in that all pertinent information about the mail piece, special services, routing, etc., is embedded within the code. This requires a much more complex code but eliminates some of the need to (passively) access a database to obtain the desired information. Codes that embody each of these characteristics will have a profound impact upon the infrastructure of the Postal Service, albeit in different ways.

Many codes fall somewhere along the continuum between these two extremes. All present and proposed coding structures in the Postal Service will prudently balance mailer and postal interests involving infrastructure, data access and retention, ease of use, and processing implications.

CODING TECHNOLOGY

The Postal Service and mailers are already invested in infrastructure to accommodate self-clocking codes (POSTNET and PLANET), bar-no bar codes (ID Tags), and width-modulated codes (Delivery Confirmation and

special services). However, the infrastructure is not such that the codes are interchangeable for given applications. Consideration of new codes (as well as consolidation of existing codes, which is discussed below) must take into account the technological and business implications of code application, scanning, and storage. The present

POSTNET and PLANET Codes are artifacts of the 1970s. During the 1970s, the Postal Service made the decision to use Optical Character Reader (OCR) technology to read the mail piece address at the earliest opportunity, and then apply a readable barcode that represents the routing information. This enabled all subsequent sortation to be handled on lower-cost barcode reader systems.

Many potential barcode symbologies and structures were considered. The key requirements were ease of printing and ease of reading. Experience with the mechanical handling aspects of mail processing equipment exposed the difficulty (at that time) of maintaining consistent speeds as the barcode moves past the barcode reader. This factor could cause the spaces between bars in a barcode to appear larger than they are. If the width of the bars or spaces is a factor in the code structure, any speed variations would result in misreads. Therefore, it was determined that the best code for the Postal Service was one that is “self-clocking.” This means that every “bit”—or character—in the code is represented by a bar in the barcode.

It was further determined that a barcode with self-correcting capabilities was needed. Finally, the code had to be such that small volume mailers could print the code with chain printers, which were widely used at the time. These factors led the Postal Service to the POSTNET barcode that is used today. It is a simple, easily printed, easily read code that contains some self-correction capability and has proven sufficiently robust to accommodate postal needs until now.

If the only issues of concern were easy and ubiquitous barcode printing and scanning and associated costs, the simpler bar-no bar or self-clocking codes of the license plate or POSTNET variety would be optimal. However, use of these codes, coupled with a requirement to pass information about each mail piece and aggregate, means the Postal Service would have to make extensive use of databases to hold the data that cannot be held within the code. This is very likely to mean that the Postal Service could not rely on database response times suitable for online processing of letter mail. If that proves to be the case, the Postal Service would require two codes on letter mail: one for the destination (the POSTNET Code) and an identifier/pointer to a database with more information about the mail piece.

A complex two-dimensional code can carry more information. However, significant changes would have to be made to USPS recognition capabilities, resulting in higher costs. It is likely that high-speed reading of complex codes would result in lower on-line read rates than are presently experienced with today’s simple POSTNET Code and ID Tags. However, a complex code would not obviate the requirement for databases to redundantly retain the information contained in the complex code.

The major factors in choosing between the extremes of license plate coding and self-contained coding are listed in the following table. The columns on the right provide a comparative view of how well each coding method addresses these factors. The eventual solution most likely will be somewhere in between these extremes.

Factors for Consideration	License Plate Coding	Self-Contained Coding
Cost of Coding	Lower	Higher
Cost of Scanning	Lower	Higher
Cost of Communications	Higher	Lower
Cost of Storage	Higher	Lower
Impact on Mail Aesthetics	Lower	Higher
Enhancements to Features	Easier	More Difficult

CODE STANDARDIZATION

The Postal Service needs to move towards code standardization. More than 30 barcodes can be found in today’s postal environment. (See Appendix A.) Each code structure requires a means for its printing and reading, as well as processing and storage of data associated with the code, which is costly and counterproductive. The Postal Service must seize economies of scale associated with multiple uses of codes and supporting infrastructure. The Postal Service must also explore the extent to which existing international codes can be leveraged to accommodate business needs.

The Postal Service also needs to standardize the identification of mailers, facilities, and equipment. Various identifiers are frequently used, either directly or indirectly, to uniquely identify mail and aggregates. For example, for the same mailer, its ID in Confirm® is different from its ID in Delivery Confirmation. An effort is currently underway to create a single unique identifier for all mailers; adoption of this will be a significant step towards standardization.

To halt the proliferation of disparate codes, and to consolidate existing codes, the Postal Service has established a Coding Standardization Board. It will provide a logical corporate framework for coding determination and assignment; and will ensure that all coding decisions satisfy business needs.

UPDATE (MAY 2009)

The Postal Service introduced four Intelligent Mail barcodes that enable the tracking of pieces, handling units, and containers as they move across the Postal Service network. Each of these barcodes are mailer applied and have a common customer identifier called the Mailer ID (MID), which can be used to associate the mail asset to the appropriate mailer. Each barcode also has a field which is used to support a serial number allowing mailers of any size to uniquely identify their mail assets.

The Mailer ID field within the Intelligent Mail barcodes is used to identify Mail Owners and/or Mailing Agents. The MIDs are assigned by the Postal Service to each Mail Owner and/or Mailing Agent that requests them. A MID can be a 9-digit field or a 6-digit identifier and is assigned based on the annual mail volume of the mailer. MIDs are used in the Intelligent Mail barcode, Intelligent Mail Tray barcode, and Intelligent Mail Container barcode.

The Serial Number portion of all four Intelligent Mail barcodes can be populated using two methods: a Unique ID or a Unique Mailing ID. For the Unique ID method, the Serial Number portion of the Intelligent Mail barcodes is populated with a number that uniquely identifies each mailpiece, handling unit, or container. These Unique IDs are referred to as the Unique Mailpiece ID for the Intelligent Mail barcode; the Unique Tray Barcode ID for the Intelligent Mail Tray barcode; and the Unique Container Barcode ID for the Intelligent Mail Container barcode.

For the Unique Mailing ID method, the Serial Number portion of the Intelligent Mail barcodes is populated with a number that is unique to a mailing, pallet, or tray. This Unique Mailing ID is used in the barcodes of the mailpieces, handling units, or containers that are associated to that mailing or subset of the mailing.

INTELLIGENT MAIL BARCODE

The Intelligent Mail barcode is a 31-digit Postal Service barcode used to sort and track letters and flats. Unlike the POSTNET barcode that only contains the delivery point ZIP Code, the new Intelligent Mail barcode contains additional fields such as the Service Type Indicator, Mailer ID and Serial Number. These fields expand the ability to track individual pieces and provide greater visibility into the mailstream. With this Intelligent Mail barcode, a mailer can request services such as tracking and address correction all in one barcode. The Intelligent Mail barcode allows the mailer to number mail so that each mailpiece in a mailing can be uniquely identified. It contains a Mailer ID field that allows the mailer to obtain data about mailings.



FIGURE 3 - INTELLIGENT MAIL BARCODE

INTELLIGENT MAIL TRAY BARCODE

A cornerstone of the overall tracking strategy is having the capability to uniquely track handling units such as trays, sacks, and tubs. The tray label that is in use today is a 10-digit label used solely for routing. The new transitional label, the 10/24, has the old barcode on it and a new 24-digit Intelligent Mail Tray barcode. The 24-digit barcode includes routing information and data that can uniquely identify handling units and allows for the ability to identify and track the progress of trays, sacks, and tubs. The inclusion of the old 10-digit label is a transitional strategy as the Postal Service enhances all processing systems to read the new 24-digit barcode.

Ideally, mailpieces with the Intelligent Mail barcodes applied to them are placed into trays that are presorted and being routed to specific destinations. Using the Intelligent Mail Tray barcode allows the pieces within the tray to be linked to each specific tray prepared.

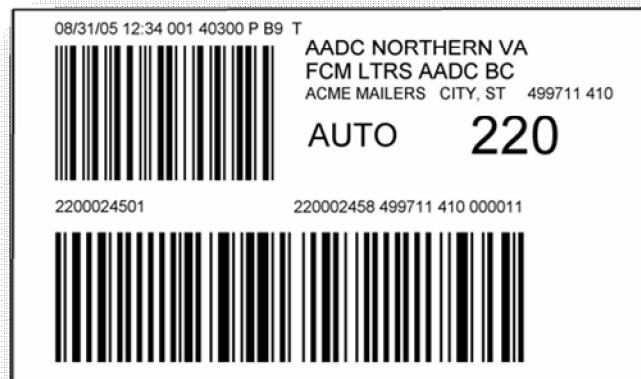


FIGURE 4 - INTELLIGENT MAIL TRAY BARCODE ON TRANSITIONAL 10/24 LABEL

INTELLIGENT MAIL CONTAINER BARCODE

The Postal Service is transitioning to a new pallet label for application on containers. The new pallet label contains the Intelligent Mail Container barcode which allows mailers to uniquely identify each container in a mailing. The Intelligent Mail Container barcode is applied to a customer's containers which contain trays and sacks. This barcode is applied by mailers and scanned at induction and at other points of the mailstream by handheld scanners like those used by the Surface Visibility program. The Intelligent Mail Container barcode is also available in a 4" X 7" specification (not pictured)



FIGURE 5 - INTELLIGENT MAIL CONTAINER BARCODE ON 8.5" X 11" SPECIFICATION PLACARD

INTELLIGENT MAIL PACKAGE BARCODE

The Intelligent Mail Package barcode conforms to different barcoding standards to accommodate the package market, but its benefits are similar to those created by the Intelligent Mail barcode for letters and flats. It contains information about the package and the mailer, which is used to sort and track the packages.



FIGURE 6 - INTELLIGENT MAIL PACKAGE BARCODE

STRATEGY 2: DEVELOP AND DEPLOY ENABLING INFRASTRUCTURE

Develop and deploy a set of enterprise-wide common infrastructures to capture codes on mail and aggregates and disseminate them in near real time.

Codes are applied to mail, aggregates, and forms to enable the capture of information about mail as it moves through the value chain from mail preparation at the mailer's facility to delivery to the recipient. The capturing and dissemination of information about mail in near real time requires different types of infrastructure.

Infrastructure is the hardware, software, telecommunications systems, power, data wiring, and associated support necessary to underpin business applications. Nimble enterprises today put adequate infrastructure in place for use by business applications in satisfying business and customer needs. Pre-positioned, leveragable infrastructure enables an enterprise to quickly build and deploy business applications that respond to emerging customer and internal needs. The information-sharing requirements of a successful Intelligent Mail effort depend upon suitable infrastructure being in place where needed, when needed.

The Postal Service must strike a balance between having infrastructure in place when needed by business applications and not spending the funds to position the infrastructure too far in advance of when it is needed. The Postal Service's track record for pre-positioning adequate infrastructure is improving. The current data wiring bandwidth in most mail processing plants is incapable of accommodating new business applications. However, the Mail Processing Infrastructure (MPI) program is poised to resolve this critical shortcoming in plant bandwidth.

Upgrades to desktop workstations and handheld scanners initiated in 2002 will help ensure that the end user has the tools necessary to execute and take advantage of applications addressing business needs. USPS enterprise data warehouse will provide the platform and tools that provide centralized access to corporate-wide data stores, thereby allowing integrated views of data derived from separate operational systems to extract greater business value.

The Intelligent Mail program focuses on the infrastructure components that are (a) not currently in place or are in need of upgrading, and (b) critical to successfully creating a knowledge-based, Intelligent Mail system. Key among these is the upgrade of plant data wiring (MPI program) and a new suite of handheld and mountable scanners that will replace the current aging units as well as provide additional functionality.

ELECTRONIC INFORMATION FROM MAILERS

The first opportunity to capture information about mail is before it is created. Many mailers begin to create information about a mailing days, weeks, or even months in advance of tendering that mail to the Postal Service. By sharing that information with the Postal Service, mailers create an opportunity for improved postal planning and scheduling. Electronic information about mailings also provides a critical link in the chain of data that forms the basis for service information, tracking, and revenue assurance. The exchange of electronic information also makes it possible to reduce the amount of information that must be encoded on the mail piece itself.

To support Intelligent Mail, customers will need to provide information about the unique codes that are included on the mail pieces and other unit loads that are part of their mailing. They will also need to provide information about the makeup of their mailing; any arrangements they have made to schedule acceptance, transportation, and entry of their mail; and any special services they require related to their mailing. This information will be used by the Postal

Service to determine processing, transport and delivery requirements, and to provide other value-added services. The ability to link mail pieces and unit loads back to an electronic manifest or mailing statement will provide both customers and the Postal Service with visibility into the mail stream.

Currently, mailers participating in programs like Parcel Select, Confirm®, and Pallet and Bundle Tracking provide electronic manifest data to the Postal Service before mail is entered into the system. Data may be transmitted directly through the program-specific server, or routed through common portals like *PostalOne!*™.

CODE PRINTING

Customer application of unique identification codes will depend on modifications of several key technologies. These include modifying software to generate the desired codes, modifying printers to print the codes at production speeds, and changing processes to relate the unique identifiers to the mail piece information needed to support the value-added services. The current mailing industry has adapted to the ability to print POSTNET bar codes to support postal distribution requirements. Mailers are also beginning to print PLANET codes to take advantage of the Confirm® service.

From the Postal Service perspective, any change in codes that must be read by mail processing equipment entails a change in the recognition electronics of some combination of 1,100 OCRs, 9,700 Barcode Sorters, and/or a small number of Radio Frequency Identification (RFID) systems. Furthermore, extremely high read rates are achieved with the existing codes and technologies. The business value of new coding structures must be calculated, taking into account the total system infrastructure and processing costs of the existing and proposed systems.

The Postal Service will study the technology available to the mailing industry and the currently installed base of technology before making any decisions about future coding symbologies to ensure that the costs of mailer conversion are taken into account.

DATA ACQUISITION

Passive acquisition of data is a requirement for a cost-effective Intelligent Mail program. The Intelligent Mail strategy will rely on passive data acquisition wherever practical. Passive data acquisition refers to the use of technology that does not require immediate human intervention. Information about mail and mail aggregates is collected as a by-product of the normal processing operation. Passive acquisition includes data captured by automated mail processing and mail handling equipment, the use of Radio Frequency Identification (RFID) technology, and the automatic exchange of electronic data files. The initial phases of Intelligent Mail will rely on existing mail processing and material handling equipment. The OneCode Vision will depend, in part, on the modification of postal equipment to acquire the future code.

Active data acquisition requires human intervention. This includes keyboard entry and handheld scanning of bar codes. The Intelligent Device Project will develop a family of handheld data acquisition devices to support the needs of future Intelligent Mail, including replacements for the current Mobile Data Collection Device (MDCD); scanners for use on docks; acceptance/verification scanners; handheld computers for supervisors in processing, customer service, and delivery operations; and devices for use in a variety of inventory management operations.

NESTING

As mail pieces are aggregated into trays, the knowledge of which mail piece is in which tray enables the visibility of the individual pieces to be maintained by tracking trays. Similarly, tracking of containers will provide visibility of trays, and hence individual pieces. While there is value in capturing nesting data, the cost associated with it must be balanced against the value of the information captured.

To the extent that it can be done economically, *exact, one-to-one* nesting information will be captured. For example, some highly automated mailers know precisely which letter goes into which tray, and which tray goes onto which pallet. The nesting information is already stored in electronic manifests such as Mail.dat, a standard file format that enables mailers in the mailing industry and the Postal Service to exchange mailing data in a consistent and cost effective manner. Similarly, postal plants with automated materials handling (such as a robotic containerization system) can be modified to construct the precise manifest of each pallet or container it builds with little added cost.

In some situations, capturing exact, one-to-one nesting information would incur significant investment or labor costs. Unless the costs of manual scanning can be justified through savings from reducing misrouted trays, the Intelligent Mail system will have to rely on *inferred, many-to-many* nesting information. For example, if 4,000 letters are sorted to St. Louis on a given day and nine trays are assembled for dispatch to St. Louis, the system can infer that the 4,000 letters are nested inside the nine trays. If two containers are then dispatched to St. Louis that same day, the system can infer that the nine trays are nested inside the two containers. Since it is inferred, many-to-many nesting information is not precise and has some level of uncertainty. However, it is still valuable. Ultimately, the precision required of gathered nesting information will be determined by balancing the value of the information and the cost of data capture.

DATA COMMUNICATIONS

The data communications infrastructure consists of the data networks (wiring, switches, and servers) within postal facilities and the wide area network that connects postal facilities. Key elements of the infrastructure include the associate office infrastructure, several mail processing local area networks (LAN), and the managed network services wide area network (WAN). Mail processing LANs are established and maintained by engineering, while other networks are maintained by the CTO organization.

This infrastructure must be robust enough to meet the increased needs of Intelligent Mail. All elements of the infrastructure will be evaluated and upgraded, if needed to support Intelligent Mail. The initial upgrade will be the replacement of obsolete data wiring in plants under the Mail Processing Infrastructure (MPI) program.

DATA STORAGE

The data storage infrastructure provides the basis for consolidating data from multiple acquisition points and making that data available as information. Near-transactional short-term data retention systems will translate the immediately actionable data into information and knowledge for use by postal employees and customers. The USPS enterprise data warehouse will provide the platform and tools for access to corporate-wide data stores, thereby allowing integrated views of data derived from separate operational systems.

UPDATE (MAY 2009)

In May 2009, the Postal Service launched the Full-Service program for mailers. The systems deployed to support Full-Service enhance visibility at the ends of the mail supply chain, which in turn increases the breadth of visibility into the Postal Service supply chain. Systems and enhancements are also being deployed that link information about mailers to mail pieces thus enhancing mail quality assessment.

ELECTRONIC DOCUMENTATION

There are three forms of electronic mailing information transmission for letter and flat-shaped mail: Mail.dat®, Web Services, and Postage Statement Wizard®. All involve sending information to the Postal Service's PostalOne!® system. All three of these options provide customers the ability to submit electronic information about their mailings, which the Postal Service can use to generate the necessary documentation to support verification, payment, and "start-the-clock." This electronic information can also be used to automate payment processes using electronic payment options such as ACH Credit or Debit.

POSTALONE! SYSTEM: PostalOne! enables Intelligent Mail by serving as the single point of entry for all electronic mailing information used in service performance measurement to validate mail piece scan data. PostalOne! manages business mailing transactions and streamlines the mail acceptance process by facilitating the electronic exchange of mailing information between mailers and the Postal Service. This collaboration gives customers a streamlined process for mail entry, payment, tracking and reporting.

Customers select one of the electronic mailing information transmission methods (Mail.dat, Web Services, Postage Statement Wizard) and send the electronic information using the PostalOne! system. This information management system provides an electronic linkage between a customer's mailing information and Postal Service business mail acceptance and induction processes. PostalOne! translates this customer generated electronic information into mailing documentation. Thus, mailers are able to avoid the creation of paper based forms and use technology to manage their mailing data. PostalOne! can also use this information to automate payment processes using ACH Debit or Credit payment methods. With PostalOne!, mailers have 24X7 access to their mailing documentation and financial transaction information.

MAIL.DAT@:

Mail.dat is a composite file structure that was developed by the IDEAlliance® organization for the industry to communicate mailing information across the mail supply chain. Mail.dat files are sent electronically to the PostalOne! system where they are stored and used to generate documentation to support verification and payment.

WEB SERVICES:

Web Services enables customers to submit mailing information using a Web Service over a secure connection (HTTPS) with the Postal Service. Web Services use a SOAP protocol to submit information in an XML format that ensures that the data can be sent and received by applications written in various languages and deployed on various platforms.

POSTAGE STATEMENT WIZARD:

The Postage Statement Wizard (PSW) is a tool that provides a secure way to submit a postage statement online using a PostalOne! account. The PSW verifies completed information for an online postage statement. The PSW automatically populates the permit holder section of the postage statement based on the account number provided. It guides the user through the items needed to complete the statement based on information provided. When entering mailing information through PSW, it automatically calculates the postage and validates the information entered. Once the postage statement is completed online, the electronic statements will be submitted directly to the acceptance unit.

There is one method of electronic mailing information for parcel-shaped mail – the Confirmation Services file. The Confirmation Services file is submitted to the Product Tracking System (PTS). Electronic mailing information is a requirement for Presort parcel mailers to qualify for the electronic rate option.

ELECTRONIC VERIFICATION SYSTEM (E-VS):

The Electronic Verification System (e-VS) allows package mailers to document and pay postage, including extra service fees, using electronic manifest files. Mailers transmit the files over the Internet to a Postal Service database. The Electronic Verification System mirrors existing manual manifest process but does so electronically. The Postal Service captures sampling data, which is used to monitor postage accuracy, after the mailing arrives at the destination entry Post Office. Instead of reconciling sampling data against individual manifests, it is reconciled against all manifests received from the mailer during the month.

The Electronic Verification System eliminates paperwork by replacing hardcopy manifests, postage statements, and adjustment worksheets with electronic documentation. Postage is electronically deducted from the mailer's PostalOne! postage payment account. Mailers can review the results of postage samplings online, monitor the quality of their mail, take preventive measures to ensure discrepancies do not recur, and avoid possible postage adjustments.

ELECTRONIC APPOINTMENTS

The Facility Access and Shipment Tracking (FAST) system is an electronic appointment system that mailers use to schedule the deposit of mail at postal facilities. Customers may schedule appointments online using the FAST web site or they may submit appointment requests using the Transaction Messaging (TM) specifications submitted through PostalOne!/FAST Web Services. This convenient messaging protocol provides customers the opportunity to integrate the appointment scheduling process into their supply chain management software and receive information about their appointments from the Postal Service electronically. FAST takes into account mail shape (e.g., letters, flats, and parcels) and pallet presort-level information to maximize the capacity offered at each facility. All Periodicals, Standard Mail, and Package Services drop shipment customers are required to schedule appointments using the FAST. First-Class Mail will be enabled in 2008.

MAIL PIECE, HANDLING UNIT, AND CONTAINER SCANNING

The ability to scan mail pieces and aggregates is core to visibility. The Postal Service has enhanced current scanning capabilities and added capabilities where needed.

MAIL PROCESSING EQUIPMENT:

As mail processing equipment sorts a mail piece, information is gathered from machine scans to determine the piece's location within the postal network. All major mail processing equipment has the ability to scan the Intelligent Mail barcode on mail pieces during processing. The machines with mail piece barcode scanning capability include:

- Letters: Delivery Barcode Sorters (DBCS), Mail Processing Barcode Sorters (MPBCS), and Carrier Sequence Barcode Sorters (CSBCS)
- Flats: AFSM 100 and UFSM 1000
- Packages: Automated Package Processing System (APPS) and Small Package Bundle Sorter (SPBS)

INTELLIGENT MAIL DEVICE:

The Intelligent Mail Device (IMD) is an ergonomically designed, handheld computer capable of running mail processing applications and scanning barcodes. The Postal Service has rolled out new Intelligent Mail Devices to carriers, mail handlers, and drivers. The Intelligent Mail Devices currently in the field can read IMBs, but will need a software upgrade in order to collect data using new start- and stop-the-clock event codes, parse the data in the codes, and make that data available to other USPS systems.

INTELLIGENT MAIL DATA ACQUISITION SYSTEM (IMDAS):

IMDAS has replaced the handheld scanners that carriers, mail handlers, and drivers formerly used to scan IMBs on handling units and Delivery Confirmation forms. The Intelligent Mail Data Acquisition System (IMDAS) program is implementing a standardized hardware and software platform for mobile data collection and data transfer through scanning technology. The IMDAS program promotes a family of handheld data acquisition devices to support the current scanning needs of Postal Service products and services, as well as support the future scanning needs of Intelligent Mail products and services. The

IMDAS supports tracking mail pieces, unit loads, transportation, inventory and performance operations using a standardized family of mobile devices. This program includes replacing the current Mobile Data Collection Device (MDCD) scanners, which postal personnel use for delivery operations, dock operations, and customer service operations. The Intelligent Mail Data Acquisition System was developed using integrated architecture and infrastructure that are consistent with industry best practices. The IMDAS yields an accurate, reliable, and stable flow of data, and is required to interface successfully with the existing postal infrastructure.

INTEGRATED DATA SYSTEM (IDS):

The Integrated Data System (IDS) is designed to be the central source for the collection and distribution of mail processing and mail piece data from all automated mail processing equipment (MPE) and material handling systems (MHS) at the mail processing facilities. The IDS is an automated system, designed to perform daily operations unattended. IDS takes advantage of the barcodes that the postal service uses to identify and track mail pieces within the mail-processing environment. It presently supports the Computerized On-line Notification For Inbound Reply Mail (CONFIRM) services provided by Marketing to bulk mailers. Data Collection Servers (DCS) have been installed in the major mail processing centers as part of the Integrated Data System (IDS) project. At the end of every mail processing run, enabled MPEs send files containing data extracted from the mail piece barcodes to the DCS, over the MPE/NDSS LAN. The DCSs then process, store and forward the data. In smaller offices, the data collection application will be located on the NDSS Remote PC (NRPC) or the Station PC (SPC). The collected data will be forwarded to the DCS in the parent P&DC over the Postal Wide Area Network (WAN) also known as the Managed Network System (MNS).

INTELLIGENT MAIL VISIBILITY SERVICE (IM-VIS):

In order to eliminate point-to-point interfaces among the many systems that capture scans, the Postal Service has developed IM-VIS. IM-VIS is the central message broker that distributes all piece-level and container-level scan data collected by the Postal Service mail processing equipment and Intelligent Mail devices to several Postal IT systems. IM-VIS is a single point of integration that supports an “any source, any consumer” messaging network.

STRATEGY 3: ENHANCE ADDRESS QUALITY

Strive for the highest quality address possible for the Postal Service and its customers.

The Postal Service and its customers depend extensively on the completeness, accuracy, and currency of address information in every aspect of their business functions, including list management, mail preparation, and mail processing and distribution. Because all mail pieces require an address to complete the delivery service, any code used to identify mail pieces must include or point to a delivery code. Poor quality of the delivery code directly impacts the cost of postal operations and service performance due to redirection and extra handling. Poor quality also diminishes the value of information inherent in Intelligent Mail.

As the Postal Service pursues increasing levels of automation to control cost and improve services, the necessity of address quality also increases. Enhancing address quality is therefore an important strategy of Intelligent Mail. The Postal Service must ensure that the National Address Database and the National Change-Of-Address Database are accurate and up-to-date. In partnership with licensed and certified vendors of directory services and supporting software, the Postal Service must also support the mailing community in ensuring the accuracy of their mailing lists and postal code generation software.

ADDRESS INFORMATION

There are three critical components to a correct deliverable-as-addressed piece of mail. The first is a correct address that is presented in such a way that it can be translated by machine into a valid delivery point code. The second is a name associated with the address. Mail is not considered deliverable until both components are correct, unless the mailer replaces the name component with “occupant” or “resident”. The third critical factor is change information resulting from either a physical address being changed or from relocation by a person or family from one address to another.

Address Quality has two major thrusts: provide intelligence to the mailer so mail introduced into the Postal system is deliverable as addressed and coded; and provide intelligence to USPS employees to efficiently correct undeliverable as addressed (UAA) mail so it becomes deliverable. An efficient feedback loop to the mailer is also required to ensure that subsequent mail has a valid delivery address. Both of these missions must be accomplished in such a way that the security of the mail itself and the privacy of the individual to whom the mailpiece is address are protected.

Machine-readable coding on the individual mailpieces offers the greatest opportunity to create an efficient and timely feedback loop. The mailer can code instructions to the USPS for how it wants UAA mail to be handled. The USPS can more quickly flag UAA mail to the mailer. Fewer UAA mailpieces will result in (a) the mail being of higher value to the mailer; and (b) lower operating costs for the USPS.

The quality of the information in the Address Information System (AIS) and the National Change-of-Address Database (NCOA) is the cornerstone of address quality. Therefore, improving the completeness, accuracy, and currency of the information in these systems is a major thrust of the Intelligent Mail effort.

Since the beginning of the automation programs for letter mail, Address Management has established procedures to improve the quality of AIS and NCOA. Existing processes, such as Density Analysis and National Street Review, and existing infrastructure, such as the Address Management System (AMS) will be enhanced by streamlining and utilizing the latest IT and Web-based technology. In addition, Intelligent Mail will create new automated and passive processes to improve the quality of addresses.

Keeping the NCOA database up to date plays a crucial role in enhancing address quality. The Address Management organization will make it easier for customers to file COA orders, always taking care to ensure security, authenticity, and privacy. Another area of focus for Intelligent Mail is to build intelligence into the COA process to ensure that COA information supplied by the customer accurately reflects a legitimate delivery address.

ADDRESS QUALITY PRODUCTS AND SERVICES

The quality of address information in mailers’ databases is an important link in ensuring that the delivery point code applied to mail is accurate. The Postal Service offers a variety of products and services to help mailers maintain high-quality address databases. These include an extensive list of AIS products, such as the ZIP+4 Product, City State Product, Five-Digit Product, Delivery Type File, and Carrier Route Product. Combining some of these products and providing feedback loops will facilitate more intelligence in deriving delivery addresses and postal codes.

The NCOA Service makes COA information available to mailers to help reduce undeliverable mail. It helps mailers identify changes of addresses before mail enters the mail stream. The NCOA Service is provided to mailers through private sector companies that are certified and licensed by the Postal Service. Address Change Service (ACS) provides electronic notification of address changes to reduce the cost of processing COA notifications for the Postal Service and the mailers. The Intelligent Mail program is investigating knowledge-driven systems that will allow mailers to receive validated COA information and update their databases and mailings in near real-time.

UPDATE (MAY 2009)

With the implementation and use of the Intelligent Mail barcode, several achievements in our goal of Enhancing Address Quality have been accomplished:

- Provisioning of new address correction options such as the OneCode ACS® and the Full Service (ACS) programs to make it easier for mailers to manage the accuracy of their address lists.
- Expediting the processing of PS Form 3575 Official Mail Forwarding Change Of Address Order that is used by customers to advise the Postal Service of their change-of-address. By adding the Intelligent Mail barcode to this form we are now able to capture the form at first handling and direct it quicker to our scanning operation for processing.
- Performing in-depth analysis of Undeliverable-as-Addressed mail that looks at the UAA problem from new perspectives than previously available, focusing more specifically on where and why UAA mail occurs as opposed to simply tabulating UAA volumes.
- Leveraging information provided by the Intelligent Mail barcode through an internal feedback mechanism to improve the accuracy and completeness of information maintained in our Address Management System data.

Testimonials from Mailers

"Data-Pac fully endorses and supports the Intelligent Mail Program of the USPS and believes that its success will be critical to the economic success of both the USPS and the commercial mailing industry." - Richard Yankloski, Data-Pac Mailing Systems Corp.

CHAPTER 4: STRATEGIES FOR THE FUTURE

For this revision of the *Intelligent Mail Vision*, the strategies have been expanded to include the following:

- Measure and improve commercial mail performance
- Drive product innovation
- Sharpen operational insight
- Enrich the customer experience

STRATEGY 4: MEASURE AND IMPROVE COMMERCIAL MAIL PERFORMANCE

Establish robust service measurement capabilities to measure the performance of commercial mail and guide service standards improvements

The implementation of Intelligent Mail provides the Postal Service the ability to measure service performance on most commercial automation-compatible mail. This gives the Postal Service an unprecedented level of detail about the performance of different mailing demographics and reduces the cost of measurement. It also complies with the service measurement standards outlined by the Postal Accountability and Enhancement Act.

INSIGHTFUL SERVICE MEASUREMENT

Through the implementation of Intelligent Mail and recent introduction of Full-Service, the Postal Service now has a highly accurate new method for measuring service performance that is part of the natural flow of mail which includes a significant portion of automation mail, and results in increased granularity of measurement.

First, Intelligent Mail enables a new degree of accuracy in determining when the Postal Service took possession of a mailing and, therefore, when to start-the-clock for Service Performance Measurement. Using the power of Intelligent Mail, the Postal Service can now know with certainty when mail was inducted along with details about that mail such as who transported the mail and where and when the mail was inducted into the network. This insight eliminates the ambiguity that has challenged previous in-process measurement efforts and provides a new level of confidence and clarity in the performance measurement metrics.

Next, measurement through Intelligent Mail is part of the flow of mail and incorporated into existing operational processes meaning there is little manual intervention required by customers or the Postal Service. Using mail that complies with the requirements of Full-Service eliminates the need for seeding mail pieces into the mail stream because it uses actual mail. This allows for postal resources to process the mail as usual, which keeps the cost of measurement low and improves the accuracy of the start-the-clock.

In addition, using Full-Service mail allows for a significant portion of automation-compatible mail to be included in performance measurement. Previously, only seeded mail was monitored and measured which produced results at an aggregate level and thus limited detailed analysis. Using Intelligent Mail, many more mail pieces can be included in

measurement, which increases the granularity of measurement and results in comprehensive measurement based on a true census measurement of mail rather than a sample of mail pieces. This hybrid measurement capability will enable accuracy at a much deeper level. Pieces will not only be trackable from acceptance to delivery, but also between individual facilities and within a facility producing detailed measurement data. It also enables performance measurement using multiple variables such as mail characteristics, preparation level or even mail preparer.

The Postal Service can also use Intelligent Mail to capture barcode scans that can serve as an accurate proxy for Stop-the-Clock. The hybrid measurement approach proposed by the Postal Service for service measurement combines aspects of internal and external measurement systems. In hybrid measurement, only the last-mile (from final mail processing operation to the home) is measured externally. Since a stop-the-clock event can be assigned to most automation mail, detailed analysis of mail flow and performance will be available.

Testimonials from Mailers

"With start-the-clock, we know when our mailings are inducted into the postal network, enabling us to determine with greater accuracy when our customers will receive their magazines." - Joyce McGarvy, Crain Communications

MORE RELIABLE SERVICE STANDARDS

Using Intelligent Mail, the Postal Service will have opportunities to improve the accuracy and reliability of current service standards based on detailed data from performance of mail with similar characteristics. Customers trust the Postal Service as a trusted business partner and service standards are a commitment to customers to deliver. By improving the accuracy of service standards, Intelligent Mail will help the Postal Service meet its customers' expectations and improve the value they see from mail.

Understanding service measurement is a fundamental component to setting and communicating accurate service standards. Characteristics such as entry facility, delivery facility, shape, weight, and acceptance day allow the Postal Service to get specific in standards and evaluation of compliance which also delivers guidance for improvement. Using traditional measurement processes, scores could only be produced that were accurate at the 3-digit level with more granular, detailed insight was limited. In contrast, through Intelligent Mail, large portions of automation mail can be included in measurement throughout the Postal network creating detailed data that was previously unattainable. Performance between postal facilities, to the delivery unit, and ultimately to the delivery point can all be measured more accurately. The transparency attainable through Intelligent Mail increases customer confidence in measurement results and increases the value of the mail.

UPDATE (JULY 2010)

Intelligent Mail has now been used to measure the performance of commercial mail for several years and the benefits have clearly been confirmed. With the increased adoption of Full Service this year, Intelligent Mail is providing an increasing level of insight for use in driving service performance.

FULL SERVICE MEASUREMENT

Until summer of 2010, the Postal Service was using an interim solution to deliver Intelligent Mail service measurement data for PRC reporting. In June this year enhancements were completed to the Full Service platform to deliver Intelligent Mail insight from Full Service mailings to the external reporting system for creation of the

reports provided to the PRC. Now mail pieces from all Full Service mailers are eligible to be included in service measurement. In addition to a greater breadth of data available, the new solution also includes robust capabilities to evaluate the quality of the mail to ensure that all mail included in service measurement can be measured accurately.

The Postal Service also intends to begin to provision the Start-the-Clock (STC) information for all business mailings entered into the Postal mail stream. Mail entered into the business mail entry units will utilize a check-in process for documenting Start-the-Clock. Mail picked up at a Detached Mail Unit will utilize the CSA process to calculate Start-the-Clock. Mail accepted at origin and transported by the mailer to a Postal induction facility will utilize an appointment process to document Start-the-Clock. Start-the-Clock will represent the day zero processing date. The USPS will continue to only use Full Service mailings for service performance measurement, since service performance measurement requires piece level barcode uniqueness.

CENSUS MEASUREMENT

US Census Bureau decided to use Full Service on the decennial census, mailing over 500 million mail pieces using Intelligent Mail. This allowed tracking of not just those individual mail pieces but the aggregate tray, container and shipment information as well. Using insight derived from Intelligent Mail, the Census Bureau was able to track the timely and accurate delivery of mail pieces to every US household. This allowed for the early identification of errors in mail preparation as well as delays in processing, significantly improving the performance the Census mail. Intelligent Mail was also used to track the responses sent by households which gave the Census Bureau the ability to measure response rate and target their efforts where response rates were low. Information about geographic portions of the country that lagged in response rate allowed Census to target a multi-channel communications effort. The end result was that Census exceeded all targets for response by mail and was able to reduce processing costs by over \$7 million.

STRATEGY 5: DRIVE PRODUCT INNOVATION

Use the power of Intelligent Mail to create products and services that enhance the value of mail.

The Postal Service will leverage Intelligent Mail data to create targeted, compelling offerings, simplify existing products, and drive improvements in speed-to-market. These new mail products will increase the value of mail to the customer and drive revenue generation.

NEW PRODUCT INNOVATION

Information about mail adds value to mail. By packaging Intelligent Mail data into new product offerings and subscription services, the Postal Service can provide access to this valuable information to partner with customers to make mailing operations more efficient and generate a greater return on their mailing expenditures.

With access to Intelligent Mail barcode scan data for their outgoing and incoming mail pieces, companies can align their marketing and operations with the actual processing and delivery timing of their mail. For outgoing mail, barcode scans and nesting relationships can pinpoint when mail pieces are inducted at a Postal Service facility as

well as the delivery timing. This enables piece-level visibility and helps companies to time promotions and follow-up marketing efforts to coincide with in-home delivery.

For incoming mail, scan data allows mailers to determine when and where their customers mailed the incoming pieces. By anticipating their customers' orders and incoming payments, companies can better manage their cash flows, order processing, and customer service. Intelligent Mail data will become a valuable tool in helping companies reduce costs, increase the effectiveness of marketing programs, and improve relationships with customers.

The Intelligent Mail barcode can also be leveraged for license plating, used as a pointer to a database record. Data associated with a unique mail piece can be stored in postal or customer IT systems, enabling an unlimited storage capacity for information about the mail piece. Companies may save information on marketing campaigns or link specific mail pieces with promotions to allow better tracking of past marketing performance.

OneCode Confirm® is an existing postal subscription service that provides barcode data to customers. With Intelligent Mail, the Postal Service can find additional ways to package data depending on the nature and frequency of customer data needs. Intelligent Mail offers an increased level of granularity and new ways to utilize data. For example, advance notification and proof of induction data can provide additional information to help companies manage their supply chains.

PRODUCT SIMPLIFICATION AND IMPROVED SPEED-TO-MARKET

In addition to allowing for new product offerings, Intelligent Mail has introduced the capability to simplify existing products and improve new product speed-to-market.

In the past, the introduction of new products or services involved extensive changes in manual processes and procedures as well as the potential need for significant new architecture. Implementing these changes required widespread coordination, training, and communication efforts across the postal network. With the introduction of Intelligent Mail, this process can be greatly accelerated and simplified. For example, each barcode contains a three-digit Service Type Identifier, which corresponds to a particular mail class and combination of services. This identifier automates the handling of commercial mail that carries an Intelligent Mail barcode, and because its use has been standardized across all Intelligent Mail services the Postal Service can now introduce new products and services with minimal impact to operations and processing personnel and no new infrastructure. Presently, the Service Type Identifier is used for only a limited set of offerings, but in the future, the Postal Service anticipates leveraging the code to support expansion of its products and services.

Another example of how Intelligent Mail can accelerate and simplify product development is the ability to uniquely identify any mail asset (piece, handling unit, or container). These assets carry a unique barcode that can be linked to data that has been submitted about the mail which provides nearly unlimited capacity for information about that mail. Currently, uniqueness used in tandem with electronic documentation enables start-the-clock for service measurement. When combined with the Service Type code, uniqueness can be used to enable complex handling instructions that minimally impact operations and processing personnel.

DYNAMIC PRICING

Another product innovation possible through Intelligent Mail is dynamic pricing. Because Intelligent Mail provides detailed information about induction and processing times, the Postal Service can provide incentives to mailers to help balance the supply and demand for mail services at different times and locations.

By charging reduced rates during hours with additional throughput capacity, the Postal Service can reduce variability in processing utilization rates and plant capacity requirements. Because dynamic pricing provides an

incentive for mailers to optimize utilization of postal facilities, it would allow mailers to take advantage of available processing capacity while not affecting the cost structure of postal operations. This reduces the average cost of operations and produces savings that can be passed on to the customer. Dynamic pricing has been used successfully in the utility and telecommunication industries.

The Postal Service's Office of Sustainability has set a goal of reducing energy consumption 30% by 2015. Making more efficient use of processing facilities will also help the Postal Service reduce its environmental footprint, and dynamic pricing offers customers an incentive to work with Postal Service in meeting that goal.

CUSTOMER INSIGHT

The information generated by Intelligent Mail offers the Postal Service an opportunity to learn more about its customers' preferences and behavior than ever before. By gathering comprehensive mail stream data along with electronic documentation about the mail, the Postal Service will be able to identify key customer segments distinguished by factors such as mail volume, usage patterns, mail makeup, and class or service preference. Based on these segments, the Postal Service can vary products by use and structure that better suit a variety of customer needs. Negotiated service agreements are a good example of how pricing and services can be tailored to specific customer needs. As the true mailing profile of a customer is analyzed and understood, opportunities for operational improvements that produce cost savings that are mutually beneficial to the customer and the Postal Service can be evaluated, negotiated, implemented and measured all using Intelligent Mail.

In the past, the introduction of new products or services involved extensive changes in manual processes and procedures as well as the potential need for significant new architecture. Implementing these changes required widespread coordination, training, and communication efforts across the postal network. With the introduction of Intelligent Mail, this process can be greatly accelerated and simplified. For example, each barcode contains a three-digit Service Type Identifier, which corresponds to a particular mail class and combination of services. This identifier automates the handling of commercial mail that carries an IMb, and because its use has been standardized across all Intelligent Mail services, the Postal Service can now introduce new products and services with minimal impact to operations and processing personnel and no new infrastructure. Presently, the Service Type Identifier is used for only a limited set of offerings, but in another example how Intelligent Mail can accelerate and simplify product development is the ability to uniquely identify any mail asset (piece, handling unit, container). These assets carrying a unique barcode can be linked to data that has been submitted about the mail which provides nearly unlimited capacity for information about that mail. Currently, uniqueness used in tandem with electronic documentation enables Start-the-Clock for service measurement.

UPDATE (JULY 2010)

As development continues to build out the capabilities of Full Service attention can now turn toward developing new products and services that leverage that platform. This innovation has accelerated this year as mailers and the Postal Service collaborate to define new ways to use Intelligent Mail.

INTELLIGENT MAIL APPLICATIONS

As customers begin to use Intelligent Mail they are defining innovative ways this data can add value to their business. To enable the creation of these new products and services, the Postal Service has created Intelligent Mail barcode "apps". These "apps" are customer defined uses for Intelligent Mail implemented by the Postal Service. The first of these IMb "apps" allows customers to buy greeting cards with postage included for one price. Postage Paid Greetings uses a unique IMb on each card included in a package of cards, creating an easy to use, convenient way for consumers to pay postage without having to track down a stamp. And business customers benefit as they are only charged the postage when the consumer mails the cards.

INTELLIGENT MAILBOX

Intelligent Mailbox uses existing Postal Service capabilities to deliver a compelling new offer to mailers and consumers. Intelligent Mailbox uses mailer data and Postal Service Intelligent Mail scans to provide consumers and small businesses with digital content about the mail predicted for delivery each day. Mailers participating provide details about mail pieces including who sent the mail and the name of the mailing along with targeted offers unique to each piece. As the mail is prepared for delivery, scans are captured which are highly predictive of delivery and associated to a delivery point.

To create the Intelligent Mailbox, electronic data is combined with scan data as received and used to send digital content to consumers and small businesses. Users register for Intelligent Mailbox and provide a validated delivery point. Digital content for mail to be delivered that day can be sent to verified e-mail address or cell phone as well as displayed on a secure website where it can be stored.

Intelligent Mailbox empowers consumers to choose the format and communication method to receive digital content about their mail and empowers mailers to provide additional information to consumers by closely integrating their electronic inboxes with mail received. Testing to validate the capabilities of the Intelligent Mailbox has started and will conclude in Q1 of FY2011.

STRATEGY 6: SHARPEN OPERATIONAL INSIGHT

Develop focused analytics that provide insight into processing and network operations and a clear understanding of cost drivers.

With Intelligent Mail, the Postal Service will have data that can be used to develop detailed, accurate insight into operations which is valuable in targeting process and infrastructure improvements as well as driving out costs. The granularity of information that is attainable through Intelligent Mail can be used throughout the improvement process: during planning, implementation, and post-program evaluation.

OPERATIONAL EXCELLENCE

With Intelligent Mail and Full-Service, the Postal Service can now develop insight into issues having cost and service impacts. This data can be used to develop a clearer understanding of events such as outages, service interruptions, and abnormal processing events which allows the Postal Service to make adjustments to processing to minimize the risk of these events occurring in the future. It can also be used to analyze costs to identify cost drivers or processing efficiency improvements. For example, Intelligent Mail data has already been used in analysis to identify mail processing handlings that added little or no value and eliminate them from the standard mail flow. Removing unnecessary handlings results in reduced costs and more reliable service for the customer.

Intelligent Mail also provides the visibility needed to identify mail that requires attention. Using this data to identify mail that is consistently mishandled or, because of some issue, is at risk of not meeting service standards creates a more efficient, reliable network. It also provides for the future capability of using this data to proactively address issues before they arise.

COST ALLOCATION

Products must remain both relevant and cost effective. Intelligent Mail will give the Postal Service a better understanding of the costs incurred throughout a product's lifecycle. The data made available by Intelligent Mail will enable the Postal Service to compare the planned and actual costs associated with product processing and maintenance. Armed with this information, the Postal Service can ensure that its products are priced appropriately. Negotiated service agreements (NSAs), which are individually tailored for each customer, are a significant opportunity for the Postal Service. Through the granular visibility attainable with Intelligent Mail, costs incurred during service can be tracked on a per-piece basis. This was not possible before Intelligent Mail. Aggregating this information for an entire NSA will help the Postal Service ensure that revenue generated from the agreement is substantial enough to offset the costs. The end result of a better understanding of costs is that pricing will satisfy both the Postal Service and the customer, causing the market to clear and minimizing deadweight loss.

The Postal Service will also gain insight into features that drive cost but provide little value to customers. Prior to Intelligent Mail, analysis of costs associated to different mailing products and features was limited. Operations visibility enabled through Intelligent Mail will allow the Postal Service to identify cost / feature relationships and focus on lowering the costs incurred to deliver feature-rich products.

UPDATE (JULY 2010)

With the new insight provided by Intelligent Mail it is now possible to get a much more detailed, granular understanding of how mail is processed through the network. This insight is being used to drive operational improvement that not only improves the performance of mail but also reduces processing and delivery costs.

OPERATIONAL PLANNING AND SCHEDULING

Mail that complies with the requirements for Full Service creates visibility that expands to more than just individual pieces, handling units, or containers, but across the whole supply chain. For example, the requirements of Full Service provide integrated and end-to-end visibility for drop shipment containers which the Postal Service has started to use for scheduling. As the data on incoming drop shipment mail is merged with volume data for mail already in the network, a complete picture emerges giving advance notice to processing management on what is coming to their facility. This data is also being used to provide a more complete picture of resources need to manage the flow of mail at the dock.

OPERATIONAL INSIGHT

In addition to using the decennial census to better understand service measurement, the Intelligent Mail data from that mailing was also used to develop a prototype of operational insight reports. These reports provided the Postal Service with detailed insight into how individual processing facilities handled the Census mailing and where operational improvements could be made to make processing more efficient. Using that data to pinpoint opportunity areas as well as to diagnose the issues encountered allowed Operations to target their improvement efforts and measure success. These reports are currently being expanded to use data from all Full Service mailings to broaden the insight and create a new diagnostic tool for Operations management.

STRATEGY 7: ENRICH THE CUSTOMER EXPERIENCE

Enhance the business mail entry experience and engage customers to improve

relationships.

Timely, reliable service, while important, is only part of the customer experience. The Postal Service must look for ways to partner with customers to deliver value to the end user, the consumer. Through Intelligent Mail, the Postal Service will improve interactions with customer by reducing manual verifications at acceptance and providing data that will enable customer service representatives to become proactive.

IN-PROCESS VERIFICATION

The Postal Service will focus on reducing the cost of inducting mail by automating certain manual verifications currently performed by business mail entry personnel. Each time mail is provisioned for acceptance, it must be verified by postal personnel who perform a variety of quality checks (verifications of piece counts, weights, sortation) to ensure it complies with the mailing standards and postage is accurately charged. A key aspect of verification is the use of sampling methodology. Thus a sampled portion, not the entire mailing, is subject to verification. Mailers must rework mail that fails verification or pay the appropriate price to accommodate for the discrepancy.

Through Intelligent Mail, the Postal Service can perform some of these manual verifications during mail processing operations. Using mailer-submitted electronic documentation and comparing postal mail processing results with the paid postage, many of the verifications currently completed manually can be completed while the mail is being processed on mail processing equipment. It is important to note that using this method of verification will eliminate the need for sampling. Rather, in-process verification will have the capability to examine the entire mailing.

Initial efforts are likely to focus on quality issues such as correct pre-sort levels, correct entry point, barcode readability, and address quality. Eventually, fully-automated acceptance may be possible; however, realization of an acceptance process in which mail is inducted entirely by the mailer is several years away.

These new automated capabilities are likely to cause a paradigm shift to the existing verification process, mailing requirements and potentially pricing. Rather than utilizing thresholds associated with specifications as the basis for pricing, discounts could be based upon the actual processing performance of their mailings. USPS will need to perform ongoing monitoring of the automated distribution network to ensure it is performing to required levels.

In this type of approach Mailer Owners and Mail Service Providers would need to monitor the quality of their own production systems. In turn, they could make the appropriate financial decisions related to quality. Rather than running production systems to meet minimum requirements, they would be rewarded with maximum discounts for higher levels of quality. This is a fundamental change to the manner in which mail production and mail verification are conducted today.

A Proof of Concept conducted between 2007 and 2010 has demonstrated impressive results for both customers and the postal service:

- Increased induction flexibility and speed
- Bigger mail preparation window for customers created by improved verification efficiency

- Improved accuracy in the verification process
- Increased time spent on customer service

The Postal Service has proven the value of intercepting and improving poorly prepared mail during processing. For example, the Postal Automation Redirection System (PARS) captures undeliverable mail at its origin and attempts to reconcile incorrect or missing information, where possible. By capturing defective pieces early in the supply chain, unnecessary transportation and processing is avoided. Like PARS, Seamless Acceptance will help the Postal Service partner with customers by capturing and sharing information about mail errors earlier in the process.

TARGETED VERIFICATION

By understanding mailer behavior and past verification performance, the Postal Service can allocate verification resources where needed most. This will help the Postal Service to reduce costs by limiting the number of manual verifications at each induction site.

Maintaining a profile for each mailer and documenting the quality of mail preparation on an ongoing basis will enable the Postal Service to target future verifications appropriately. For example, mailers with consistently high quality over time may have a lower percentage of their mail subjected to verification. Targeting will also allow the Postal Service to help mailers understand and improve their mail quality issues. By understanding and fixing presorting or barcoding problems, mailers can induct mail that will be delivered more efficiently and accurately. This will also reduce the cost of delivery for the Postal Service.

IMPROVED CUSTOMER INTERACTIONS

With additional visibility into postal operations, business mail customer service representatives will have the information needed to maintain stronger relationships with their clients.

Traditional customer service has been almost exclusively reactionary, addressing problems as they are raised through customer complaints. With the real-time data available through Intelligent Mail, however, customer service representatives can become proactive problem solvers and communicators. Advance knowledge of an issue allows customer service representatives to begin addressing it before customers are even aware that it exists. This is valuable to mailers, who can understand options and make decisions on how to address issues.

Additionally, advance knowledge of potential issues can be disseminated throughout the postal network so that measures can be put in place to prevent issues before they spread. For example, real-time visibility into operations can alert the Postal Service to mail that is consistently being processed abnormally. Scan data can be analyzed to determine if the abnormal processing is related to a single mailer, mail prep, or quality problems. Acting on this information, the Postal Service can reduce further impact by sending special instructions to other plants handling the same mail.

Proactive customer service can also reduce service costs. Responding to multiple customer inquiries related to a single incident can be much more costly than broadcasting one communication to the impacted parties. As service issues are identified and their impact linked to individual mailers, automated messaging can be implemented that will inform the targeted customers as soon as the issues arise. This enables each representative to support more customers.

UPDATE (JULY 2010)

Intelligent Mail provides detailed insight into the quality of mail preparation and compliance with Postal Service requirements. As that insight is shared with customers and used to understand and then improve mail quality both customers and the Postal Service benefit from reduced costs and better service.

MAIL QUALITY REPORTS

There are a number of quality metrics that can be created as part of a Full Service mailing. These metrics provide detailed insight into how the mail was prepared and how closely that mail meets the Postal Service requirements for efficient processing. Early in the year, Mailer Briefing Sheets were developed to provide Business Mailer Support a single page view into compliance with the Full Service preparation requirements for a single mailer. These sheets and the supporting data are then shared with the largest Full Service mailers to focus conversations on the compliance area for that mailer with the most room for improvement. Mailer Briefing Sheets were a key component in improving the quality of mail that was submitted requesting the Full Service discount.

With the success of the Mailer Briefing sheets, an effort was undertaken to automate these reports and provide a broader set of customers with more detailed information about the quality of their mail. The Mail Quality reports fulfill this need and were developed to give customers insight into their Full Service mailings. These reports were deployed as part of the second release (November 2009) of Full Service. Mail Quality reports allow mailers to view error details to use that data to pro-actively correct mail preparation issues. The reports allow mailers to view compliance issues with appointment, Customer Supplier Agreements, barcode uniqueness, Mailer IDs, Service Type Identifiers, and By/For identification. Additional enhancements to the Mail Quality reports are planned for the next Full Service releases (November 2010 and early 2011) that will provide increased detail and a broader set of metrics. These reports will give mail owners and their service providers unparalleled insight into the quality of their mail and how proper mail preparation can drive efficient, faster service.

Testimonials from Mailers

"[W]e are in full support of the direction and aggressive timeline the USPS has put forth for IMB implementation. We strongly feel that the implementation of the IMB will add value to the mail through better end to end visibility." - James Bowler, Mail Express

APPENDIX A: RISK MITIGATION STRATEGIES

The purpose of a Strategic Risk Mitigation process is to proactively identify risks, quantify their threat to the success of the program and implement mitigations to hedge against the exposure. The *Intelligent Mail* program has leveraged a Porter's Five Forces analysis to review competitive intensity and its impact on the success of the program.

Porter's framework incorporates five distinct pressure points:

- Bargaining Power of Suppliers
- Bargaining Power of Buyers
- Threat of New Entrants
- Threat of Substitute Products or Services
- Rivalry Among Existing Competitors

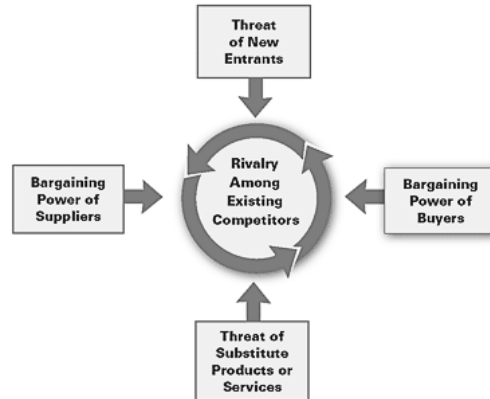


FIGURE 7 - PORTER'S FIVE FORCES

PRESSURE 1: BARGAINING POWER OF SUPPLIERS

Service providers rely on a steady supply of affordable labor to add value to their customers' products. Negative actions by the Postal Service's workforce could affect the success of the *Intelligent Mail* program.

RISK 1: LABOR REDUCTION

The core value proposition for *Intelligent Mail* is based on increasing labor efficiency. By automating bulk mail acceptance, the Postal Service hopes to reallocate labor cost and pension liabilities to other initiatives. If operating staffing levels are greater than current forecasts or labor costs experience disproportionate growth, the Postal Service will receive less return on the investment. To limit unforeseen labor expenses, the program must continuously monitor forecasted expense reduction and adjust as needed.

RISK 2: PROCESS COMPLIANCE

To fully realize the efficiencies of *Intelligent Mail*, the program must be operated in compliance with the standardized processes. Inconsistency in the operation of *Intelligent Mail* will decrease the program's core efficiencies and benefits. To ensure compliance, appropriate staffing, training and enforcement are required.

PRESSURE 2: BARGAINING POWER OF BUYERS

The mailing community's adoption of *Intelligent Mail* is a critical factor in the success of *Intelligent Mail*. The core value proposition is contingent on volume thresholds which must be obtained.

RISK 3: MAILER PARTICIPATION

Mailer participation is a critical success factor in the deployment of Full Service. *Intelligent Mail* is currently offered as an option for bulk mailers which they may choose not to utilize. If *Intelligent Mail* adoption rates are

insufficient, the sustainability of the program will be in jeopardy. To drive participation, the Intelligent Mail program has worked closely with the mailing community to incorporate mailers' input and promote a unified solution. The program has also incentivized mailers through a planned rate discount. Should the risk of insufficient adoption be realized, the Postal Service has the option to increase enrollment through additional legislative and financial means.

RISK 4: DECREASED DEMAND

Economic factors are impacting the volume of personal and business communication. In recessionary environments, customers will attempt to decrease costs by decreasing mail volume. The Postal Service must limit this impact through coordination with customers and demand-based pricing.

PRESSURE 3: THREAT OF NEW ENTRANTS

The Private Express Statutes (18 U.S.C. §1693–1696 and 39 U.S.C. §601–606) mitigate risk from new entrants by assigning the Postal Service exclusive right to transport and deliver letters through legislative mandate.

PRESSURE 4: THREAT OF SUBSTITUTE PRODUCTS OR SERVICES

Innovative new products or services can threaten forecasted returns on investments by limiting their impact or use.

RISK 5: ELECTRONIC COMMUNICATIONS

The proliferation of electronic communications has decreased volumes of traditional postal services. While initially limited to personal and business correspondence, electronic communications are moving up the postal service value chain with many bulk mailers attempting to streamline operations, cut costs and promote a "Green Agenda" by encouraging electronic messages, advertisements, bound printed matter, invoices and statements. This trend poses a risk to the viability of *Intelligent Mail* by threatening the volumes required for an adequate return. The Postal Service can mitigate this risk through competitive pricing and working with the mailing community to promote postal communication.

RISK 6: SUCCESS MEASUREMENT

A complete value proposition is required to properly evaluate the success of the *Intelligent Mail* program. While value levers have been identified, the *Intelligent Mail* program needs discrete criteria to measure the success of the program. This value proposition and measurement must be reviewed at key milestones to ensure continued relevancy and compliance.

PRESSURE 5: RIVALRY AMONG EXISTING COMPETITORS

Competition amongst other courier and package delivery services challenges the Postal Service's exclusivity rights granted through the Private Express Statutes.

RISK 7: COMMODITIZED PRICING

Many courier and package delivery services offer similar offerings to the benefits of *Intelligent Mail*. The convergence of products creates a risk that bulk mailers will view these other providers as substitutes, eliminating the Postal Service's differentiation and drawing it into increased price competition. Commoditization of mail

delivery only would serve to hurt providers as mail volumes dwindle. To protect against this risk, the Postal Service must continue to differentiate its products from competitors while continuing to incorporate industry-leading practices.