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## **Lifetime Addresses:** *A New Postal Paradigm for the 21<sup>st</sup> Century*

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### **Old paradigm:**

*The “address” on a piece of mail identifies its physical destination.*

### **New paradigm:**

*The “address” on a piece of mail identifies the recipient.  
The destination is determined from a database of  
delivery instructions provided by the recipient.*

## **1. INTRODUCTION**

Every week there are fewer and fewer aspects of day-to-day communication that have not been profoundly altered by computers in ways that were unimaginable not too many years ago.<sup>1</sup> Nevertheless, as John Diebold wrote six years ago, “the delivery of public services has tended to be an area where we decorate an obsolete practice with technology. ... We have to realize that we have the ability to look at the public needs of the early twenty-first century and match these with the technologies at our command. We must determine how we can deliver these services in a different way.”<sup>2</sup>

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<sup>1</sup> Robertson 1998, 168-169.

<sup>2</sup> Diebold 1994, 36.

In its early years postal service represented a profound communications revolution and it was revered as an agent of change. “No other institution had the capacity to transmit such a large volume of information on such a regular basis over such an enormous geographical expanse.”<sup>3</sup> “No other branch of the central government penetrated so deeply into the hinterland or played such a conspicuous role in shaping the pattern of everyday life.”<sup>4</sup>

The profound role of “shaping the pattern of everyday life” is now played by the Internet. There is a wide range of opinion on the appropriate business model for postal services and new products and services they should offer in the increasingly electronic environment.<sup>5</sup>

Postal service has a role both as a competitor with the private sector and as a contributor to electronic communication. However, regardless of how much mail will be diverted into electronic communication, there will always be a need for a reliable, cost-effective service for the delivery of physical mail from one party to another. Recent USPS data indicates that \$1.5 billion in postal costs are attributable annually to undeliverable as addressed mail.<sup>6</sup> A wide variety of mailer costs associated with undeliverable mail are estimated to be a multiple of the \$1.5 billion. About 5.4 billion pieces of mail were undeliverable, representing 3% of mail volume.

This paper explores a new paradigm in postal service that would improve the reliability and cost-effectiveness of the delivery of physical mail, the postal service’s core function. Although focused upon postal service in the United States, the new paradigm has applicability to postal systems throughout the world.

Despite the billions of dollars spent on automation, development of national addressing standards and mailer compliance initiatives, there are two fundamental problems which continue to inflate mail processing costs and degrade the quality of service – the use by mailers of obsolete addresses and poor “address quality.” These problems have a common solution.

To date USPS efforts to mitigate these problems have been largely centered around automation of the forwarding process in postal facilities, requiring large mailers to match their address lists against the national database of physical addresses, and the various move update services. Regardless of the sophistication of such systems, they are inherently remedial in nature in that they merely correct problems created by the use of physical addresses while modern information technology allows a solution to the underlying problems.

The solution this paper explores is transition to a system of *lifetime postal addresses* replacing the use of physical addresses by mailers, linked to a secure database of each recipient’s current physical address. In addition to reducing postal overhead, this new paradigm in addressing would create permanent deliverability of mail and offer significant cost savings to mailers and profound benefits to all users of the postal system, comparable to the innovations in other forms of communication, which now link senders and recipients “anytime/anywhere.”

## **2. WHAT IS AN ADDRESS?**

An address on a piece of mail is a delivery instruction to the postal service - to transport the item to a physical address or delivery point. Before the development of automated sorting

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<sup>3</sup> John 1995, vii.

<sup>4</sup> John 1995, 4.

<sup>5</sup> See Reisner 2000.

<sup>6</sup> USPS 1999, 1.

and barcoding the address, as a delivery instruction, had to be readable both by the postal clerks who hand-sorted the mail and by the carriers who delivered it.

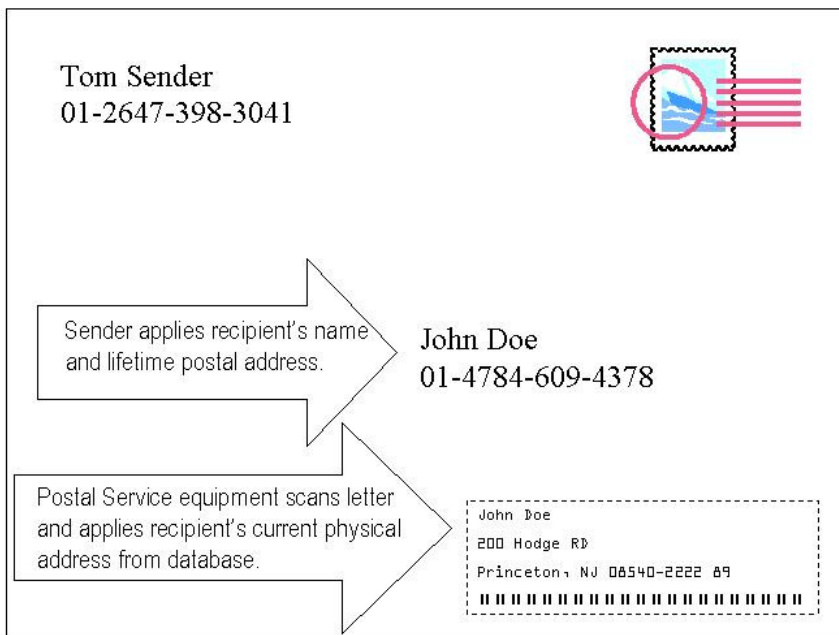
During World War II it was necessary to increase the speed of hand sorting to mitigate delays attributed to inexperienced sorters who replaced postal workers in military service.<sup>7</sup> Zone numbers were introduced in the United States during this period. Advances in technology over the years led to the introduction of zip codes in 1963 and later barcodes to speed automatic sorting further.

Advances in technology leading to the machine-readability of numbers and letters make it unnecessary for the “address” needed in the sorting process to be the same as the “address” to which the carrier refers as a delivery instruction. The latter needs to be comprehensible to a human; the former does not.

The objective of processing incoming mail through optical character recognition (OCR) equipment is to produce a postal barcode – the data output. However, it is produced automatically only if the data input – the mailer-provided address – is legible and conforms to the national database. If not, such mail is diverted for further processing by postal clerks.

However, the problem could be avoided by changing the data content of the mailer-provided address. It seems readily apparent that, in order to maximize the automatic barcoding and sorting of mail, the address data input should be designed so that data output can occur automatically. This is essentially how retail checkout systems operate, utilizing scanners to read barcodes (data input) and yield the price (data output) automatically.

Simplifying the sender’s input to a *standardized numerical identifier* of the recipient would make the physical address a component of data output, along with the barcode, in the OCR process. Although many issues have yet to be explored before determination of the optimum formatting of the address information under such a system, below is one example of how an addressed envelope might appear. The sender would supply the recipient’s postal identifier and the postal service would apply the correct physical address for delivery.



<sup>7</sup> New York Times, May 6, 1943, 44.

Redesigning the data content of an address from identification of the delivery point to identification of the recipient is a simple concept and could be implemented through adaptation of existing technology. However, it cannot be achieved by further automation of a process driven by mailer-provided physical addresses. Redesigning the data content of an address is more akin to “reengineering” rather than automation. Reengineering “doesn’t mean tinkering with what already exists or making incremental changes that leave basic structures intact. ... It does mean abandoning long-established procedures and looking afresh at the work required to create a ... product or service and deliver value to the customer.”<sup>8</sup>

The standardized addressing style and abbreviations adopted by the Postal Service will never solve the problem completely because there will always be many variables used by mailers and recipients. The success of these standards is dependent upon mailer compliance and individual mailers are not subject to the rate inducements offered to large mailers to adopt these practices.

### **3. PARALLELS TO LIFETIME POSTAL ADDRESSES**

Lifetime phone numbers have been available for years and parallels to lifetime postal addresses exist in other forms of communication as well.

Implicit in the old paradigm of postal addressing is the concept that one’s address represents the physical location where mail delivery occurs. This represented the old paradigm in telephone service as well – a telephone number was linked to the physical location where a piece of equipment was installed to receive such service. The new paradigm of lifetime telephone numbers creates a personal identifier for a telephone user who can then program instructions into the telephone network as to where calls may be received.

E-mail service had not been in widespread existence very long before the private sector recognized the need for lifetime e-mail addresses to prevent the deliverability problems arising from customers’ changes of ISP. Many such services are now available including web-based e-mail services, independent of the user’s ISP and accessible from any computer with Internet access, and alias e-mail address services which forward messages on to the user’s actual e-mail address.

#### **3.1 Finding Lost People**

The Internet has made significant inroads into the problem of finding “lost” people. There are numerous search services, alumni registries and family genealogy and other sites through which people can locate others with whom they have lost contact. Collectively these sites and services go a long way toward filling the void created by lost contacts among individuals. However, this is a void which postal services are uniquely positioned to fill since they serve *all* people. An all-numerical postal address could also be utilized as a lifetime identifier for telephone service and other forms of communication. Just as lifetime phone numbers and call forwarding provide anytime-anywhere service, an individual could program an all-numerical postal address into the communications network and make it possible to route other forms of communication through a single identifier. Unified messaging services presently enable phone, fax and e-mail messages to be received through a single number.

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<sup>8</sup> Hammer and Champy 1993, 31.

#### **4. TECHNOLOGICAL FEASIBILITY**

The technology necessary for creation of such a system presently exists. The concept of lifetime postal addresses represents only a simple new application of existing information technology.<sup>9</sup> It is a form of “logical addressing.”

Computer technology has been utilized to read physical addresses and attempt to match them to the national database in order to apply a barcode and facilitate automatic sorting. Unsuccessful matches trigger use of the remote barcoding process. Similarly, the computer forwarding system spots mail requiring forwarding by identifying addresses with a current change of address on file and determining name matches. These systems can never be 100% effective for a number of reasons, including the variables mailers may use which may refer to more than one individual at the same address and preclude unambiguous identification of the recipient.

Database technology permits unambiguous identification of each mail recipient through an address, which would remain the same for life. Check digits can detect incorrectly addressed mail and error correction software can identify the most probable match to the recipient’s name. Suffixes for each recipient could be assigned to accommodate the needs of individuals who receive mail at multiple locations. Similarly, businesses could be assigned permanent addresses with suffixes for multiple delivery points.

#### **5. BENEFITS**

USPS figures indicate that about 17% of the population moves annually. Recent figures indicate that the average cost for forwarding a piece of mail is 21 cents and 59 cents for returned mail.<sup>10</sup>

Between 1981, when the USPS Address Management System was established, and 1998 undeliverable as addressed mail increased in both absolute volume (from 2.8 billion to 5.4 billion pieces) and as a percentage of total volume (from 2.52% to 2.72%).<sup>11</sup> Mailers would realize many benefits from being able to maintain permanent mailing lists. This would largely eliminate the intermediary costs of processing address change information and utilizing the services and software necessary to improve address quality and currency of lists in order to obtain postal discounts. In addition, there is a built-in limitation on the effectiveness of the move update services in that the databases of NCOA and large mailers are not updated the instant the mover files the change of address card with USPS. Even for the mailers who update at the required frequency, there is still an inevitable time lag that creates undeliverable as addressed mail in the interim. Even a few days’ delay is a significant cost to large mailers who send bills and await payments.

Examples abound of the economic impact of lost contacts as well. Unpaid bills and child support, uncollected taxes, unclaimed property, lost revenue from former customers, are just a few. The overhead associated with administering such problems is staggering for those who have to do so. Although sophisticated databases aid in the search process, users still incur the

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<sup>9</sup> Hayes 1990, 9.

<sup>10</sup> USPS 1999, 1.

<sup>11</sup> USPS 1999, 5.

time and cost of using them, and ambiguities in identity may remain among individuals with similar names.

USPS reports that more than 5.2 billion pieces of potentially undeliverable-as-addressed mail were prevented in FY 1999 through NCOA, FASTforward, ACS and other updating services.<sup>12</sup> These databases are limited, however, to recent moves and are of no help to mailers who want to contact people who moved earlier. Purchasers of products, heirs to estates, litigation witnesses, claimants in bankruptcy proceedings, and owners of property in foreclosure are just a few of myriad examples of people who may need to be contacted by mailers on short notice after a long hiatus in communication. Their legal rights and interests may be impaired because the sender has no current address. It was recently reported that Metropolitan Life is unable to locate 600,000 of its 11 million policyholders.<sup>13</sup>

The needs of large mailers for zip codes and other demographic information can be fulfilled through systems networking their lists with the master database.

## 5.1 Strategic Thrust for Posts

The system we propose is highly compatible with the overall objectives of USPS to meet the challenges presented by new technology and to achieve breakthrough cost reductions. USPS has stated:

“To grow through the creation of unique value represents an explicit choice. It demands discipline, priorities and a focus on customer requirements. Four core strategies drive the growth principle - commit to customer service excellence; practice aggressive cost management; become a 21st century growth company; and create unique customer value.”<sup>14</sup>

USPS recognizes that “new challenges have been accompanied by new business opportunities” and that “new customer requirements have revealed new markets for postal service growth and transformation.”<sup>15</sup> New technology presents USPS with a unique opportunity to leverage its position as the sole communications service provider serving everyone. By creating a database of those it serves it would be able to identify precisely where recipients want their mail delivered and serve as a universal identifier to direct other forms of communication as well. This would be the ultimate fulfillment of the role of postal service to bind the nation together, in a manner that no other single service can accomplish, and restore the preeminence of its role as a universal service provider.

In the electronic world, private services have now sprung up on Internet which permit e-mail recipients to identify the type of information they are interested in receiving. Some services offer bonus points and rewards to individuals just for opening and reading promotional offers.<sup>16</sup> It is not difficult to imagine adaptation of such a concept to postal service, which could be accomplished by on-line registration and selection from a menu of promotions the recipient would be interested in receiving. Permanent deliverability would enhance such a service.

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<sup>12</sup> USPS 1999, 7.

<sup>13</sup> Coolidge 2000.

<sup>14</sup> USPS Five-Year Strategic Plan FY 1998-2002.

<sup>15</sup> Reisner 2000, 441.

<sup>16</sup> See, e.g. [www.mypoints.com](http://www.mypoints.com).

## 6. PRIVACY ISSUES

A non-geographic mailing address would vastly enhance personal privacy as it would enable people to be reachable by mail without having to reveal their physical address to others. This is particularly true in the case of those concerned about personal security who alter address elements in order to be less locatable.

Nevertheless, despite the privacy advantage and the many numerical identifiers that we all now have, it can be anticipated that many people would react with concern and resistance to the idea of a postal identifier. Despite their universality, some of those who oppose computer databases might oppose the proposed system as “big brotherism” and an invasion of privacy.

Some privacy advocates might ignore the privacy *enhancement* of a non-geographic address and oppose such a system based upon the argument that it would facilitate database matching and constitute a *de facto* national ID number. Although USPS would not be creating or managing such a database in a surveillance capacity, any fears of government surveillance through an addressee database could, in any case, be mitigated by private operation of the database. In either case, legitimate expectations of personal privacy can be addressed by law, software design, voluntary commercial codes and contractual obligations to protect privacy.

The fundamental considerations are, however, that in delivering the mail USPS acts as a *service provider*. To operate at maximum efficiency service providers need to maintain databases identifying those they serve. It is readily accepted that no private sector service provider could operate efficiently without doing so. USPS is obligated by law to provide universal service. The central issue thus becomes whether USPS should be precluded from full utilization of database technology simply because everyone in the country would be in it. Stated differently, should the universal service obligation of USPS be the very factor precluding it from optimizing the efficiency of its service through full utilization of information technology, as other service providers do? If so, it would support a conclusion that a private entity should deliver the mail or at least operate the address database. No private sector entity can remain competitive without adapting the best available technology to reduction of the overhead associated with its core function, and the entity responsible for delivering the mail should not be so constrained.

In this connection, the argument that USPS delivers to addresses, not people, might be offered as a reason to continue the status quo. Service to addresses might have been an “assumption to support the rule” prior to database technology. However, it is now an outmoded assumption in other forms of communication, where communication is increasingly received anytime-anywhere.

## 7. CONCLUSION: TRANSITION TO A NEW ADDRESSING PARADIGM

The USPS is a large, complex bureaucracy serving multiple and often conflicting constituencies. The need for change is openly recognized; the paths for change are openly conflicted by the multiple constituencies. With the proposed change in addressing representing such a fundamental and challenging change, the pressure to stimulate attention and action must be commensurately large. The need and logic for change will not be sufficient.

The steps below represent one path for change. First, a meaningful consortium of postal players, ideally major customers and system participants, must be formed with the goal of eliciting and insisting upon USPS objective attention to the concept.

Validation of technology, economics, regulatory, privacy and implementation issues need study and review. This can be done via a public/private partnership to ensure broad consideration of various interests. A postal leadership attitude of interest and commitment is essential as well. Defining the vision of the future and putting an organization on the path to that vision is the essence of leadership. To date the Postmaster General has spoken glowingly of USPS involvement in e-commerce and technology and has talked of treating the customer as an individual. Now is the time to move in that direction. The USPS can enter the world of electronic addressing as a defining leader or will be destined to follow the lead of others and the vagaries of chance.

Seldom does meaningful change come without conflict and risk. The benefits are worth the penny, and now is the time for action. The USPS cannot afford to let its future be defined by others, and the risk of that increases daily.

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