# Email Management & Potential Opportunities for United States Postal Service

V.A. Shiva Ayyadurai, Ph.D.[1,2], Devon Sparks[1,2],
Leslie P. Michelson, Ph.D.[1,3], Sonu M. Abraham[1]

[1]The EMAIL Lab, International Center for Integrative Systems, 701 Concord Avenue, Cambridge, MA 02138 USA
[2]Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139 USA
[3]University of Medicine and Dentistry of New Jersey, 185 S. Orange Avenue, Newark, NJ 07107 USA

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## ABSTRACT

The United States Postal Service ("Postal Service") is in the midst of an important period of historical change and is seeking new sources of revenue. This paper argues that an opportunity may exist for the Postal Service to provide *email management* as a new service offering to support this critical goal. Historically, the Postal Service's purview has been limited to providing non-digital services. This paper explores the idea that the Postal Service could be in the *mail* business be it print *or electronic*, given the true origin and nature of email as a *system*. Email management involves a combination of technology and trained human personnel for managing the receipt, sorting, routing, responding, organizing, delivering and tracking of email messages. A growing number of small, medium and large sized businesses recognize the importance of email management for customer retention and new customer acquisition. The two most widely used service offerings of email management are: (1) the handling of inbound customer service email messages (for enhancing customer retention), and (2) the delivery of outbound email marketing messages (for new customer acquisition). Independent commercial companies today offer email management services; however, there remains a large underserved market of small medium businesses (SMBs).

The SMB market, while large, is difficult to access since a large number of SMBs select service providers based on direct one-on-one contact and trusted relationships. The Postal Service may likely be able to access this market for two reasons: (1) the Postal Service has direct (day-to-day) access to SMBs unlike any other commercial "sales force", and (2) managing email should be in the purview of the Postal Service given the historical origin and definition of email, as a system, which is the full-scale emulation of the *interoffice, inter-organizational paper-based mail system*, and not simply the exchange of text message --- a system similar to the postal mail system of letters.

While email management today has become an indispensable part of a growing number of commercial enterprises, nearly seventy-percent still have not implemented email management. The technology architecture for implementing an email management system includes core functional elements for receipt and delivery, filtering, storage, intelligent analysis and workflow of email messages. The Postal Service could consider deploying email management via three potential models: (1) Tightly coupled, (2) Semi-Coupled, or (3) Loosely coupled, involving use of existing Postal Service employees, outsourced Postal Service call-center personnel, or through a broader ecosystem of multiple partners, respectively. Unique challenges exist for each deployment model. Based on the deployment model selected, varying economic results are possible, but each model suggests there may be an opportunity for the Postal Service to generate revenue. A summary of challenges and economic opportunities across the three deployment models are presented. Real-life "experiments" are proposed to test the viability of the assumptions, in order to support the Postal Service's direct evaluation of email management as a potential source of new revenue.

**Corresponding Author: V. A. Shiva Ayyadurai, vashiva@integrativesystems.org**

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## INTRODUCTION

Email management involves a combination of technology and trained human personnel for managing the receipt, sorting, routing, responding, organizing, delivering and tracking of email messages. A growing number of small, medium and large sized businesses recognize the importance of email management for customer retention and new customer acquisition. The two most widely used service offerings of email management are: (1) the handling of inbound customer service email messages (for enhancing customer retention), and (2) the delivery of outbound email marketing messages (for new customer acquisition).

Independent commercial companies today offer email management services; however, there remains a large underserved market of small medium businesses (SMBs). The SMB market, while large, is difficult to access since a large number of SMBs select service providers based on direct one-on-one contact and trusted relationships. The Postal Service, which is in the midst of an important period of historical change, may be able to access this market for two reasons: (1) the Postal Service has direct (day-to-day) access to SMBs unlike any other commercial "sales forces", and (2) managing email (as this paper argues) could be in the Postal Service's purview, given the historical origin and definition of email as a system, which is the full-scale emulation of the *interoffice, inter-organizational paper-based mail system* --- a system similar to the postal mail system of letters. The clear recognition of the true nature of email as system provides the basis for why the Postal Service could be in the electronic *mail* business.

Email management may offer a new revenue opportunity for the Postal Service. The Postal Service may be able to reasonably charge potential customers $2 per inbound email message and $0.02 per outbound email message for this service.[1] Organizations would likely be willing to pay these amounts because it is more cost-effective than the approximately $3.57[2] per inbound email message processing cost and far less riskier[3] for organizations to use professional outsourced email service providers to transmit outbound marketing messages, through an automated email management system.

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[1] The cost of an outbound email marketing message during 2011-2012 is $0.02 (http://www.fa-mag.com/online-extras/10619-advisor-marketing-the-right-way-in-the-21st-century.html?tmpl=component&print=1&page=, http://www.benchmarkemail.com/blogs/detail/mobile-marketing-web-marketing-you-cant-afford-to-ignore, http://www.motherjones.com/files/FullMediaKit_aug2010.pdf).

[2] Based on call center data in 2008 (http://www.strategiccontact.com/pdf/CC_Cost_WP.pdf), the average fully loaded cost per contact is $3.57.

[3] While an organization may directly send outbound marketing messages without the use of an email management system via an outsourced provider, the risks are significant to the organization if it is not able to be compliant with federal and state regulations. http://webmarketingtoday.com/articles/sugarman-esp/

 

Automating the process for responding to and sending email messages increases the number of email messages that can be processed per hour. Time motion studies have shown that a typical human customer service agent's productivity is on average 6 email messages per hour using existing email products for **manually** reading[4], sorting and responding to email messages. Using an email management system increases this agent productivity by at least a factor of two; therefore, on average, a typical customer service representative using an email management system can process approximately 12 email messages per hour[5]. The number of email messages call center representatives can process per hour depends on the personnel skills, the complexity of the questions asked in the inbound email messages, and whether they have an email management system in place.

In addition to handling inbound and outbound email messages, email management systems provide other services, such as real-time reports on customer satisfaction, customer intelligence, data warehousing and analytics on the email message data. Email management systems also ensure that outbound marketing email messages are delivered in compliance with current anti-SPAM legislation. In short, email management is a professional service requiring many subtle and complex elements, which may be a cost effective way for organizations to handle their electronic communications.

For an objective exploration of the potential of this opportunity, two key elements are necessary: (1) an understanding of the historical nature and origin of email as a system, and (2) an understanding of email management, which is currently a multi-billion dollar service industry providing businesses, small, medium and large, timely processing of email messages to ensure competitiveness in a growing world of online customer-facing interactions. As noted in the graph below, the usage of email systems has grown exponentially, with a significant marked increase in 1997.[6]

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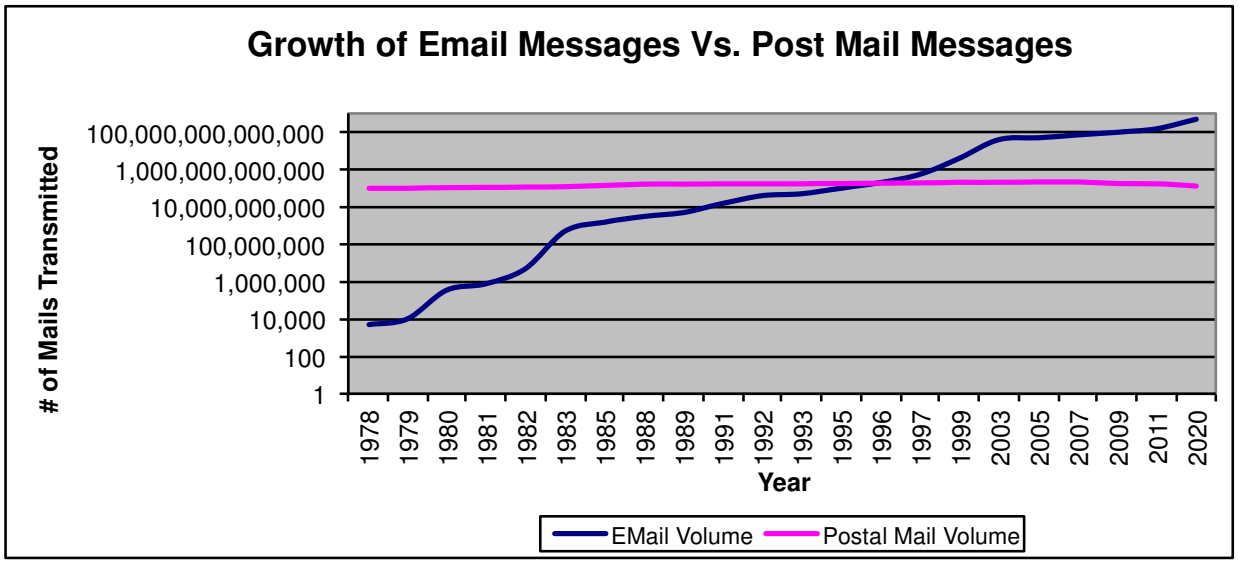
[4] "Improving the Customer Experience While Reducing Operating Costs", http://www.rightnow.com/files/analyst-reports/RightNow_Multi-Channel_Contact_Center_Benchmark_Report.pdf, 2009.

[5] Email management systems on average increase agent productivity from 6 emails per hour to 12 emails per hour. This factor of two times (2x) increase is estimated by averaging the reported productivity of three large enterprise email management systems providers (http://soa.sys-con.com/node/603021, http://www.egain.com/docs/white_papers/egain_whitepaper_citizen_service.pdf, http://www.kana.com/customer-service/email-response-system.php), and conservatively approximating the calculated average of 258% increase in agent productivity to 200% or 2 times (2x).

[6] Huffington Post "29th Anniverseary of Email" http://www.huffingtonpost.com/2011/08/30/email-turns-29-infographi_n_941699.html, 2011.

Nearly 550 billion email messages were sent in 1997. During this same period, 191 billion postal mail pieces were sent. This important development reflected a significant change in the behavior of human communications. The provisioning of email management as a service offering by the Postal Service in 1997, however, was not seen as relevant to the core business of the Postal Service. The Postal Service has now entered a unique and challenging period in its modern history. This new period has motivated the Postal Service to explore new opportunities for sustainable sources of revenue. This paper explores how email management, may provide the Postal Service one such source of new revenue.




Email management *systems* provide the technological infrastructure to centrally collect, analyze, and prepare responses for incoming email messages received by organizations' consumers, stakeholders, and employees. Such systems have become necessary to reduce the cost of managing inbound email messages as well as to provide a platform for ensuring compliance, consistency and best business practices. Human operators, customer service representatives as well as marketing personnel, interact with email management systems to respond to email messages as well as to execute electronic marketing programs.

Intelligent email management systems, to varying extents, aim to process email messages with minimal need for human intervention, to increase the productivity of human operators. Today, independent companies have created email management service offerings, employing such systems with trained human operators to process email messages. Since the Postal Service is a trusted organization and has security and oversight mechanisms in place, it is believed that the Postal Service may have significant advantages in either directly offering an email management

service or facilitating partnerships with private companies to provision such a service to a much larger base of small and medium businesses, who today have limited access to such a service offering.

Management of customer email messages is essential for those businesses, which demand high standards for customer retention and customer acquisition. These businesses have adopted email management regardless of the number of email messages being received or sent, as they have recognized the importance of each one-on-one customer-facing interaction. Analyst reports indicate that businesses that do not respond to an inbound customer service email messages have 85% chance of losing their online customer[7]; moreover, those that do consistent outbound email marketing in conjunction with other marketing efforts e.g. direct print mail, can significantly lower the cost of new customer acquisition. As discussed above, using email management services is a cost-effective way for businesses to process inbound email messages. Moreover, email management provides them valuable tracking information, statistics mined from customer interaction such as customer attitudes, what products customer like/dislike, the nature of customer complaints, etc. Such statistics provide invaluable information to retain existing customers.

**I. Key Goals of this Exploration**

There are four (4) goals in our exploration of email management as an opportunity for the Postal Service. These goals are:

1. Provide the origin and definition of email as system to serve as foundation from which the Postal Service can determine if email messaging services are relevant to its business (Part One);
2. Introduce the concept of email management and its opportunities for new revenue generation for the Postal Service (Part Two);
3. Provide a framework for understanding operationally and economically the issues and value of email management to the Postal Service (Part Three); and,
4. Propose tangible and concrete research experiments for validating potential deployment models of email management (Part Four).

[7] Campbell, Christine, "Poor online service deters offline commerce", Jupiter Communications, 2001.

**II. Organization and Logical Flow of Document**

This document is organized into the following four parts:

Part One

Part One provides the origin and definition of email as a system. The *Definition of Email* section offers the foundation for understanding that email is the *full-scale electronic emulation of the interoffice, inter-organizational paper-based mail system*. This clear understanding leads to the section on *Why the Postal Service May Now Embrace Email.*

Part Two

Part Two focuses on email management. The section on *Email Management* introduces the service offering of email management and provides various case studies across multiple industries on how email management has been used by large Global 2000 companies, government, non-profits as well as small and medium businesses (SMBs) to acquire new customers and retain existing ones. Within this context, *The Applications of Email Management* is discussed. These applications cut across customer service, marketing and sales functions. The *Technology for Email Management* section provides the architectural framework that is necessary to deploy an email management system.

Part Three

Part Three focuses on how the Postal Service can deploy an email management system. The methods on *How the Postal Service May Offer Email Management Services* is first discussed; in this section, three broad approaches are reviewed: (1) *Tightly Coupled* - where email management services may be provided through Postal Service's permanent employees; (2) *Semi-Coupled* - where email management services may be provided through Postal Service's existing outsourced call center personnel; and, (3) *Loosely Coupled* - where a platform carrying the Postal Service trusted brand is provisioned through which an ecosystem of partners can interact to deliver email management. In *Challenges in Deploying Email Management Services via the Postal Service*, the main obstacles in deploying email management at the Postal Service are outlined. Earlier experience in provisioning email management services to large and small companies are used to develop high-level economic models in the *Economics of Email Management Services* section, for each of the three deployment models.

Part Four

In the section on *Discussion of Opportunities*, a summary matrix is provided to understand the different deployment models. In the section on *Future Directions and Issues*, we explore the possible directions that the Postal Service could take relative to email management. From

these potential directions, the section *Identification of Immediate Opportunities* serves to focus our efforts on some immediate opportunities. To support the development of these immediate opportunities, a *Proposal of Research Projects,* is provided for conducting tangible and concrete "experiments" that may be executed in a limited time frame to validate the proposed operational and economic models. The final section, *Conclusions,* summarizes key findings and proposes next steps.

# Part 1 - The Origin of Email and Why the Postal Service May Embrace It

Email, in this paper, refers to a full-scale electronic emulation of the interoffice, inter-organizational paper mail system. Understanding email as a system clarifies why the Postal Service may seek to embrace it.

## DEFINITION OF EMAIL

Different types of *media* flow through different *systems* of communication. For example, a *letter* is one of the mediums that flows through the *postal mail system*. Similarly, a *text message* is the medium that flows through the *short messaging system (SMS)*. An *email message* is the medium that flows through an *email system*. The terminology used for the medium should not be confused with the terminology used for the system. Just as a "letter" is not the postal mail system, an "email message" is not an email system. Systems are a made up of an interconnection of parts. The kinds of interconnections and the parts determine the unique nature of a system. One could have the same parts, but interconnect them differently, to get different types of systems.

### I. Systems and Media

A system, at its most general description, is defined as a set of interlocking parts consisting of a combination of three fundamental elements: *transport, conversion, and storage*. The media that flows through these system elements can be in one of several forms, such as: *information, matter, or energy*.

**Table 1 – System Elements and Medium in Most General Form.**

| System Elements and Media | Transport | Conversion | Storage |
|---|---|---|---|
| **Information** | Ethernet | Computer | Storage Array |
| **Matter** | Oil Tankers | Refinery | Storage Tanks |
| **Energy** | Copper Cable | Power Plant | Battery |

In Table 1, three different system examples are provided to appreciate how this generalized approach to systems and media provides a foundation for understanding the nature of *all* systems. Within any form of media there are various instances. For example, information may appear as a book, a digital document, a text message, a tweet or an email message. Matter may be a rock, a cup, oil or a glass of water. Energy may be electrical, magnetic, or mechanical, for example. Heat for example, converts matter from solid to liquid to gaseous. Transducers

for example, convert energy from electrical to mechanical to magnetic. The conversion element has been the key to the transformation of information to various forms. The process of scanning converts a paper document to a digital document, for example, making the *transport* element of a system more fluid.

**II. A Relational Taxonomy of Information Messaging**

Over time, human civilization has manipulated systems of communication to provide more accelerated means of information communication. The core functional elements of transport, conversion and storage have remained unchanged, but through technological advances, their methods of implementation have produced significantly different types of systems of communication. The Postal Service is itself a *complex system* of communication, which emerged from the interconnection of multiple sub-systems of transport, conversion and storage of paper-based mail. And, as we will see below, email is another system of communication, which emerged from the "electronification" and interconnection of multiple sub-systems of transport, conversion and storage of the interoffice, inter-organizational paper-based mail.

To understand and define the nature of email as a system, a relational approach is required. If one ascribes to the philosophy that nothing in life is defined by itself, but in relation to other objects, then the nature of any media and its associated system will be defined by its relationship, both contextually and historically, to other media and their systems. Early forms and systems of communication, for example, were rooted in myth, primarily in oral tradition, and relied on the persistence of memory. Without the use of the written word, stories were shared through direct face-to-face contact, preserved through repetition and adaptation, sometimes using poetry, music and dance.

In India, the great epics of the Mahabharata and the Ramayana are such examples. In Western culture, the residues of these traditions can be found in the works of the Greek epics such as the Iliad and the Odyssey, which were traditionally sung by minstrels, and adapted to the needs of new generations. The persistence of communication was sometimes visible in large structures, demonstrating the importance of time and tradition. The Parthenon and Rosetta Stone trade their great weight and immobility for such persistence in time. Similarly, the paintings in France's Chauvin Cave -- the oldest in the world-- are the work of several artists, collaborating in a shared visual narrative though separated in time by several thousand years.

The development of writing systems, the proliferation of papyrus, and the invention of the printing press made it possible to commit that oral tradition to a permanent record, and to

distribute it widely. The shift of power from time-oriented oral tradition and myth to the systematic, linear media of books, mass newspapers and radio had a significant role on human development, and indicated a strong shift to a new form of long-range communication, where information could traverse and be dispersed across both time and space. This was particularly valuable for administration and commerce. It is no exaggeration to claim that the entire modern world, everything we see around us, is built from, and dependent on, a fundamental control over movement of matter and information across space and time: books, newspapers, radio, telephone, TV, email messaging, text messaging, community forums, trade routes, railroads, automobiles, airplanes, and space travel. However, the channels and extents of these spatial media and their systems are not identical, and an exploration of their properties can reveal the underlying assumptions and cultural effects in the modern world of both print and digital text-based communication systems.

Such a relational understanding of information media requires a "space". We define that relational space by proposing three independent dimensions or modes of text-based communications and their associated systems:

**(1) Short Messaging**
**(2) Community Messaging**
**(3) Intimate (or Formal) Messaging**

These three modes of messaging appear to be invariant across both print and digital media, and in fact have analogs to pre-modern forms of human communication as summarized in Table 2, below.

**Table 2 – Different modes of messaging and their exemplar mediums and systems**

| Modes of Messaging | Pre-Modern | Print World | Digital World |
|---|---|---|---|
| **Short Messaging** | Smoke:<br>Smoke Signal System | Sticky Note:<br>Note passing system | Text message:<br>Short Messaging System |
| **Community Messaging** | Cave Walls:<br>Cave Drawings | Comment:<br>Bulletin Board System | Post:<br>Blogging system |
| **Intimate (or formal) Messaging** | Papyrus:<br>Scribe system | Memo:<br>Interoffice mail system | Email message:<br>Email system |

Table 2 provides a perspective of how, over time, human development of different systems of communication across each mode of messaging served to evolve the particular information media within the invariant messaging modes. Each mode of messaging in our modern Print and Digital Worlds has their origin in Pre-Modern times. Table 2 also provides a metaphorical approach to understand the nature of these different modes of messaging.

Short Messaging – An Example, the Sticky Note

The sticky notes are the common 2" by 2" yellow pieces of paper. They are good for writing, "short", 10 to 20-word messages. They are convenient for exchanging short messages between an assistant or partner: "pick up the milk" or "don't forget your 10 am dentist appointment". The limited space requires one to be parsimonious, think before writing, use abbreviations, and mnemonics or drawings, like the smiley face. Some use sticky notes, placed along the edge of their computer screens, to serve as urgent reminders to get certain tasks completed, sooner than later. Since they are for short messages, they typically used to convey a singular thought or instruction, and likely are informal in nature.

Community Messaging – An Example, the Bulletin Board

Anyone who has passed by a community bulletin board where posters, suggestions or offers are posted using thumbtacks, knows the value of that medium for community messages. Community messaging is different than short messaging. Community messages are shared through a bulletin board. They are public and typically accessible for many others. They encourage others to participate, within a confined topic or discussion, started by one individual. They allow one to post suggestions or ideas and to receive open feedback from others in a local community. Physically, such a bulletin board is much larger than the sticky note, and typically stands 5 feet high and 7 feet wide and provides the conversational space in which community messaging is accomplished. Most schools have them in the hallways and retail establishments have them near the check out counters to get customer feedback. The bulletin board at my local retail food store, for example, has posts such as "Hey, can you have more organic fruits" and "Why is there no chocolate milk".

Other community members, who see these posts, can respond to a particular post, by posting responses next to them, in a proximal "thread" of communications. For the post on organic fruits, other organic fruit lovers demanded, "Yeah, get the Washington State apples" and "Please make sure that they are really 100% organic". These posts are open, transparent and available for all to see. They foster a collective and participatory behavior, and let others gain a better understanding of concerns being raised about the establishment. The owners or managers of the establishment can moderate the boards and respond, so the community

knows that they are responsive to the needs of the community. They reflect a sense of openness and transparency.

Intimate (or Formal Messaging) – An Example, Letters (or Memos)

A letter or memo either received at our home mailbox or at work is an example of an intimate (or formal) message. Unlike short messages and community messages, intimate (or formal) messages serve a very different purpose. These messages are typically more structured. They consist of fields such as: "To:", "From:", "Subject:", "Date:", "Body:", sometimes with "Cc:", "Bcc:" and attachments including photos, other documents, and other media. Letters and memos require greater thought in their production. Love letters, a legal termination notice, notification of changes to policies and procedures, are examples of such thoughtful and formal communication. These letters and memos could be personal or official communications. They are typically more than 20 to 30-words, and are generally not for public consumption, but to individuals or targeted groups of individuals. Security of transacting, acknowledgement of receipt and prioritization are other features of letters and memos. They may have salutations such as "Dear Bob" or "To Whom It May Concern" or "Hi". It is generally accepted that when you write a letter or memo, it is directed to someone or sometimes to a group and such a salutation aids in personalizing the message.

The above examples from the Print World provide a concrete understanding of the three messaging modes. They are a first step towards providing clarity in the Digital World where email is misunderstood. Many who define email would lump short messages, community messages, and intimate (formal) messages together. This would be like defining a letter as: "… a method of exchanging handwritten messages from one author to one or more recipients." With such a definition, we would consider the sticky note, a bulletin board and a letter the same thing, since they all exchange handwritten messages from one author to one or more recipients. Such a definition could lead to erroneous conclusions of the future of the letter, such as the "Letter is Dead", say with the growing use of community bulletin boards or sticky notes. This sounds absurd; since a bulletin board and a sticky note each serve a very different purpose than a letter. But this is exactly what has been occurring in the digital world, as TXT, SMS, blogs, and wall posts appeared, expert after expert declared, "Email is Dead", thinking an email message is the same thing as a TXT or a blog.

Email, as system, as we will see in the next section, was intended to facilitate an already well-established social process (memos and letters), addressing the existing needs of scientists, engineers and doctors – but also secretaries, politicians and civilians. Email is a great poster

child adage that the content of any new medium is an older one[8]: the content of an email message was that of the Interoffice Mail. Email, therefore, is literally the interoffice mail and Postal Service Mail *system* in its electronic representation.

**III. Email is a System – A System of Interlocking Parts**

What we know today as "email" is really a *system* --- a system of interlocking parts, each of which is essential for ordinary people to communicate effectively with one or many others, in an environment where different kinds of information must be shared (memos, documents, files, etc.) i.e. the modern office environment.

Many people over the age of 40 will remember the *interoffice paper mail system*, which was the basis of how offices around the world operated, from the level of secretaries to CEOs. The interoffice mail system had the following interlocked parts (as detailed in Table 3 below), which are the now-familiar components of email: "Inbox", "Outbox", "Drafts", "Memo" ("To:", "From:", "Date:", "Subject:", "Body:", "Cc:", "Bcc:"), "Attachments", "Folders", "Compose", "Forward", "Reply", "Address Book", "Groups", "Return Receipt", "Sorting". This system was not only used within offices but also for communicating between different organizations. Appendix A shows Table 3 - The System of Interlocking Parts of the Interoffice, Inter-organizational Paper Mail System.

The interoffice, inter-organizational paper-based mail system was therefore an interlocked system of parts. If you took away any one component, such as the ability to attach other materials or the use of folders, send attachments or make carbon copies, your ability to function with co-workers is greatly impaired, and the system itself would become non-functioning.

**IV. Email - the Full-Scale Emulation of the Interoffice, Inter-Organizational Paper Mail System**

Email is the full-scale electronic emulation of the interoffice, inter-organizational paper-based mail system as identified in Table 3 of Appendix A. This definition is an important one, as it clearly sets forth that email is a system of interconnected parts --- parts, which have their origin in the paper-based mail system, a system familiar to the Postal Service. Table 4 in Appendix B provides a list of the major parts of an email system, which are also parts of an interoffice, inter-organizational paper-based mail system, derived from Table 3.

[8] This adage is an observation of Mashall McLuahn who was one of the 20th centruy's leading media theorists, also know for the comment, "the medium is the message".

Note that, beyond reproducing the functional parts of the paper mail system, email as a system, noted in Appendix B, also incorporated a set of *Integrated System Components* to ensure the implementation of the entire system in an electronic format. The Integrated System Components made email network-wide, highly-reliable, and easy-to-use so anyone from secretaries to doctors to technical folks to executives could transition from the typewriter to the keyboard. The creation of email, with all the familiar features, which we take for granted today in programs such as Gmail, Hotmail and others, therefore, by definition is the full-scale electronic emulation of the interoffice, inter-organizational mail system.

Email, therefore is a system, and is *not* simply exchanging messages among computers, even if a person at one end types a message to a human recipient. Sending text messages alone is what today we call texting, SMS, Chat or Twitter. In fact, sending text messages electronically could be said to date back to the Morse code telegraph of the mid 1800s; or the 1939 World's Fair where IBM sent a message of congratulations from San Francisco to New York on an IBM radio-type, calling it a "high-speed substitute for mail service in the world of tomorrow."

## WHY THE POSTAL SERVICE MAY EMBRACE EMAIL

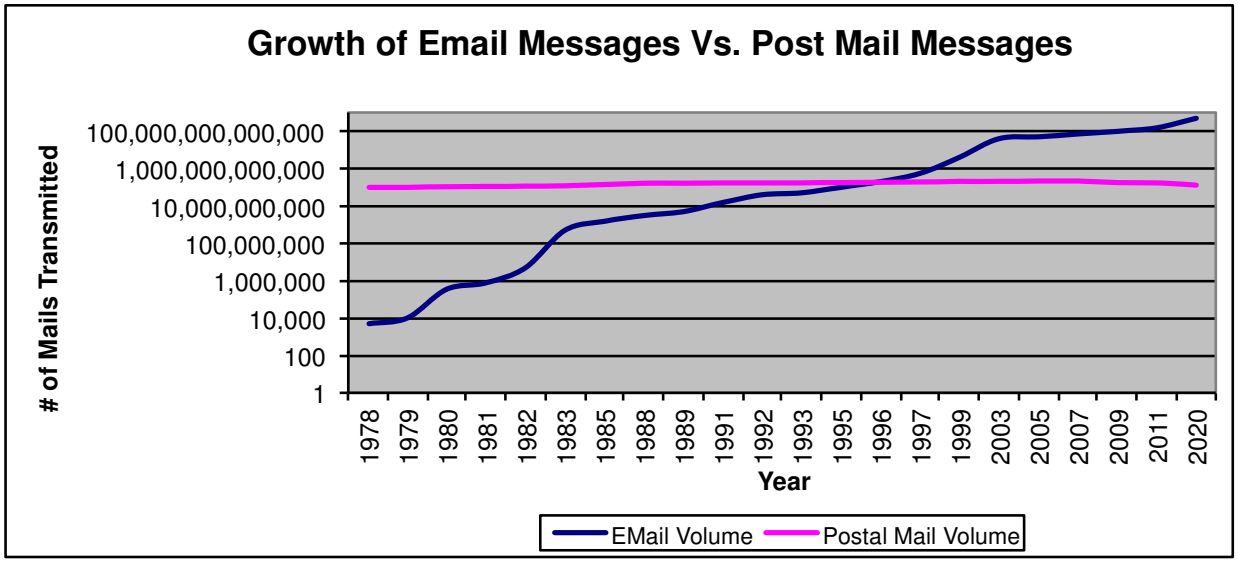
The origin and definition of email, as discussed, should clarify why there may be an opportunity for the Postal Service to embrace email. The postal mail system, whether it be paper or electronic, consists of a set of interlocked parts involving common across, such as mailboxes (e.g. Inbox), registered mail (e.g. return receipt), security, notification, retries, sorting, address book, transport and delivery, universal accessibility regardless of skill (e.g. no one needs to be a postmaster or a computer scientist to send a paper mail or an email), etc. This fact helps support the idea that email is a natural extension of Postal Service core service offerings. As the use of email systems have grown worldwide, so has the volume of email messages, as indicated by the use of email systems, as shown in the graph below.[9]

As noted I the graph, the usage of email systems has grown exponentially, with a significant marked increase in 1997. Nearly 550 billion email messages were sent in 1997. During this same period, 191 billion postal mail pieces were sent. This important development reflected a significant change in the behavior of human communications. Email management involves the receipt, sorting, routing, responding and tracking of email messages. Independent companies today offer email management as a professional service for small, mid-size and large organizations. Email management *systems* provide the technological infrastructure to centrally

[9] Huffington Post "29th Anniverseary of Email" http://www.huffingtonpost.com/2011/08/30/email-turns-29-infographi_n_941699.html, 2011.

collect, analyze, and prepare responses for incoming email messages received by organizations' consumers, stakeholders, and employees. Such systems have become necessary to reduce the cost of managing inbound email messages as well as to provide a platform for ensuring compliance, consistency and best business practices. Human operators, customer service representatives as well as marketing personnel, interact with email management systems to respond to email messages as well as to execute electronic marketing programs.




Today, in a world of privatized email messaging service providers, for example, where privacy and security are in question, the unparalleled history of law and jurisprudence for managing paper mail provides the Postal Service, a unique opportunity to potentially offer email management services, through the goodwill of its trusted brand.

## Part 2 - On Email Management: Definition, Applications & Technology

This section on *Email Management* introduces the service offering of email management and provides various case studies on email management's use across large Global 2000 companies, government, and non-profit organizations as well as small and medium businesses (SMBs). Email management as a service offering involves delivering both technology and trained personnel. The technology provides the infrastructure to receive, sort, process and respond to email messages. The trained-personnel interact with the technology to ensure accuracy and compliance. Email management enables these organizations to acquire new customers as well as retain existing ones. Within this context, *The Applications of Email Management* is discussed. These opportunities cut across both customer service and marketing and sales

functions. The *Technology for Email Management* section provides the architectural framework necessary to deploy an email management system.

## EMAIL MANAGEMENT

On February 22, 2010, Aiko Toyoda, the Chairman of Toyota, admitted that Toyota had failed to "Connect the Dots." Consumers had experienced a disastrous flaw in Toyota's brake pedal design, which resulted in catastrophic accidents and deaths. As early as December 2008, Toyota received information from customers concerning the brake pedal matter --- their customer service department had been receiving communications from consumers, in email messages as well as other media. By failing to "Connect to Dots," he meant that his internal organization had failed to "connect" the complaints being received by Toyota's consumer call centers with the other "dots" or parts of Toyota's internal organization, such as product development and manufacturing. The results were disastrous: consumers died and were injured seriously --- deaths and injuries that could have been avoided far earlier.

### I. The Value of Managing Email

Since the time email messages became the preferred medium of communication in the business world, volumes of inbound email messages from customers to businesses has increased dramatically. On average, a mid-sized business received nearly 3,000 email messages per month, and most large businesses receive nearly 30,000 email messages per month. Most small businesses received nearly 1,000 per month.[10] Inbound customer email messages from customers contain valuable information. In an email message, customers provide, in general, more thoughtful feedback and information than in a customer phone call, given the nature of the written medium. More importantly, the medium captures the "conversation" and stores it for future review and use. The archival nature of the medium has many implications, including legal and compliance. However, many businesses, in spite of the growth and importance of the medium, have either failed or were slow to realize the value of the information and feedback in email messages. An example of such a missed opportunity is Toyota's brake pedal issue.

Why did Toyota's call centers not notify product development and manufacturing of the brake pedal matter? It should have been easy for them to forward and route those recurring email message complaints --- far easier than phone calls or print mail --- to product development managers, one would think. The reality is that email messages from customers were not taken seriously as a source of aggregating and mining information for intelligent decision-making; and

[10] Call Center Metrics: Best Practices in Performance Measurement and Management to Improve Measurement and Management to Maximize Quitline Efficiency and Quality, http://www.naquitline.org/resource/resmgr/issue_papers/callcentermetricspaperbestpr.pdf

more importantly, while they had their normal email systems e.g. Outlook, Notes, etc. for corporate email messaging communications, there was no emphasis on the management of *email messages.* Had they treated email messages as an information stream of customer thoughts in real-time, they could perhaps have detected the serious customer complaints far ahead of time.

According to a Jupiter Research study, nearly 70% of organizations do not perform effective email management. [11] So, in that sense, the Toyota incident is not that surprising. When a new medium emerges, it is historically treated with habitual experiences of interaction from earlier forms of media. This is the case with email messaging. For example, in the 1920's, during the glory days of Broadway, when film, became a new medium, most early filmmakers simply pointed the camera at the stage and made a "film." They thought that by simply putting a camera in front of a theatrical stage and shooting the actors doing theater was "making a film." It was not until many years later that once filmmakers recognized that a camera could be panned, zoomed, taken on location, etc. that real film with "shots" and "editing" could be done. Realization of the medium's potential enabled the creation of films that went beyond just pointing a camera at the stage. More importantly, a new art form developed, far different than theatrical stage performances.

Today, many still use email systems like early filmmakers made movies. Many in customer service departments do not understand the nature of an email message's characteristics. They simply answer an email message like a phone call, or respond to it in a delayed manner like print mail, and express other old habits. They believe that basic email systems can do email management, and herein lies the problem, and opportunity of email management.

Email management marketing service provides services for the outbound transaction of marketing messages, while email management call centers provide services for the management of inbound customer service email messages. The email management platform, previously described, supports both; however, most organizations functionally have marketing departments handle one aspect and customer service departments handle the other aspect. Only few enterprises like QVC coordinate both inbound and outbound transactions in a unified manner.

[11] Campbell, Christine, "Poor online service deters offline commerce", Jupiter Communications, 2001.

**II. The "Guts" of an Email Message**

There are many components to email management, as will be discussed in the next sub-section. Philosophically, email management recognizes that the accurate reading, filtering and either routing of or responding to the email message accurately is critical to managing email messages. As volumes of email messages grow, the incorporation of intelligent technologies for email message analysis optimizes the process. An email message consists of unique properties, not that dissimilar to physical properties --- understanding these properties, could help to process email messages faster and cheaper, and with greater consistency and managerial oversight--- a quality important to commercial companies, given the legal implications of email message communication.

An Example

To understand these "properties" of an email message, consider the following example email message:

> *Dear Nike,*
> *I love your web site. However, I am upset with my shoes, they squeak. Furthermore, my son is graduating college, can he have an internship at Nike. I'm a CEO of a company and would also love a copy of your annual report.*
> *Sincerely,*
> *Mark*

The properties used to sort an email message vary across different email management systems. As an example, one email management system uses the following properties to categorize contents of an email message.[12]

(1) Attitude
(2) Issue
(3) Request
(4) Products
(5) Customer Type

By quickly being able to extract this analysis, it was observed that one could respond to an email message much faster and more accurately. Let us now review each property in detail.

[12] Ayyadurai, V.A.S., "Filter for modeling system and method for handling and routing of text-based asynchronous communications," US Patent No. 6,718,367 , 2004.

The first property is the *Attitude* of the email message. An email message can be classified as negative, neutral or positive, or a combination, by honing in on key words such as "terrible" or "superb." In the example, there are multiple attitudes: positive --- "love" of the web site; and negative --- "upset" with the shoes.

The second property is the *Issue* of the email message. There are two issues in the above email message: web site and shoes. The email message could also have been about other issues such a billing problem or merchandise return, or a legal problem. The third property is the *Request* the writer is making --- say the location of the nearest outlet. In the example, the request is for two things: a job and an Annual Report.

The fourth property is the *Products* the writer is interested in. In the example, it is shoes. Finally, the fifth property is the *Customer Type.* This means who is sending the email message? Email writers often give away such information as whether they own a boat; they may also provide their home address and zip code. An email management system could gather this information and add it to the client's customer database. In the example above, it is clear the individual is the CEO of a company and likely a male e.g. the name "Mark".

Using a number of techniques, an email management system can extract these five properties of any email message. If the system finds the word 'Web site' and 'problem' in close proximity, it might conclude that the email message's issue is an online ordering problem. Depending on how an email message gets classified, the system can choose either to reply from a selection of prewritten responses or forward the email message to one or more departments for humans to address.[13]

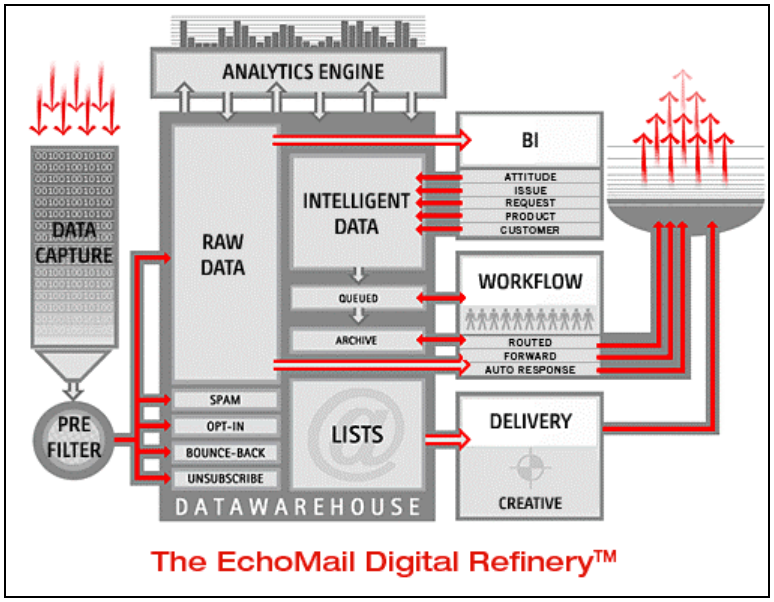
## THE COMPONENTS OF EMAIL MANAGEMENT

The intelligent analysis of an email message is one of several important components of email management. The methods used to process email messages vary across different email management systems. While the particular functions of any one component may differ across specific email management systems, Figure 1 below provides one example of an email management schematic.

[13] Ayyadurai, V.A.S., "Relationship management system and method using asynchronous electronic messaging," US Patent No. 6,668,281, 2003.

**Figure 1 – Email Management System Components**




(1) Email Data Capture: Receive incoming email messages in various formats: internet email, form-based email message and/or secure email message.

(2) Pre-Filtering: Here, email messages meeting specified parameters are filtered out. Any SPAM & unwanted content is put into a SPAM folder. Other undeliverable email messages (also known as bounce-back' and unsubscribe requests, for example) are separated into other folders.

(3) Raw Email Message Data: This is a holding queue for all the "real" email messages that need to be processed. In this data store, additional tags may be added to each email message for further processing and may include the ability to connect to remote databases and retrieve specific information about the email message author and his/her transactions with the organization.

(4) Intelligent Analysis module, also known as Business Intelligence (BI) module: This module reads the raw email message data and analyzes the subject, the message and attachments and any tags added by the data enhancement module. The module analyzes the content in an attempt to understand the subject matter of the email message. The approach used here is to recognize the importance of sorting incoming email messages based on the following five criteria, discussed earlier:

a. Attitude: Can be positive, negative, or both and may be neutral;

b. Issue: The key issues in the email message e.g. damaged product, inaccurate billing, etc.;
c. Request: A request for information e.g. annual report, information on a product, or a job;
d. Product or Object of Interest: The key product or object of issue e.g. shoe, umbrella, sofa, etc.; and,
e. Sender Type: Who is the Sender? e.g. male, female, CEO, teacher, etc.

This module may store this 'intelligence' as "Intelligent Data" tagged on to the email message.

(5) Workflow module: It is through this module that the gathered intelligence is used to determine which department(s) or person(s) in the organization are best suited for taking action on the email message and sends the email message to them. In addition, here, the workflow module can also use the intelligent "tags" from the Intelligence module to automatically create a response for review by a human editor. This module enables the customer service representatives to interact with the email message and either edit, route, forward, or close the email message, so the sender receives an accurate and timely response.

(6) Customer Service Personnel: Customer service personnel interact through the Workflow Module to process email messages.

(7) Archival module: An essential module of an email management system, this module (also called Email Message Archiving) stores every email message received and responses sent in a database that allows easy searching of past email messages. An archive with search capability is legally required for certain organizations such as financial service companies.

(8) Analytics module: Uses all the available information from other modules to present statistical reports and graphs. These reports and graphs help the organization to make immediate (increase or decrease staff that handles certain types of email messages) and long-term decisions (improve a product or service that received a high number of complaints in the past ninety-days).

(9) Lists Module: This allows the creation of email address lists and targeted lists for email marketing campaigns.

(10) The Delivery Module: This module enables the delivery of two types of email messages: (1) An email message sent in response to an inbound email message, or (2) A proactive email message that may be for marketing purposes. Through

the Delivery Module, for example, marketing personnel can login in, load creative marketing ideas, execute simple to complex marketing campaigns.

**I. The Mechanics of Email Management**

The platform for email management can be applied in many ways as will be discussed in the subsequent section. Broadly, though, email management supports electronic dialog between an organization and its constituent *en masse* for "listening" or for "talking", via inbound customer service management or outbound electronic marketing.

Inbound Customer Service

Email management can be used to lower the cost of customer service. In Figure 1 (The Digital Refinery), inbound service email messages are received on the upper left, and then are first filtered. The "raw email messages" are then analyzed for content to extract important properties. This extraction aids in the ability for either automatic response generation or queues for a live customer service representative to formulate answers faster. Through the workflow module, customer service agents, located anywhere, with access to the Internet can log in and process email messages, and then the message is delivered through the upper right delivery process.

Outbound Marketing

Another use of the email management platform is to gather email addresses associated with customer data, and create targeted lists for email marketing. Email marketing enables organizations to reach out to specific customers, at a significantly lower cost. These are just two of the many applications of an email management system.

**II. The Workforce Necessary for Email Management**

With the growth of email management, organizations began creating in-house "email call centers" as well as "email marketing teams", for managing inbound email messages as well as for outbound marketing. Some organizations also began outsourcing these functions to outside companies, with many located overseas. Whether the function was kept in-house or outsourced, personnel logged in and conducted customer service and marketing through an email management platform or multiple platforms. A small business with few customers may not need a specific email management solution other than a diligent staff member who will promptly respond to the incoming email messages. If the number of email messages is over fifteen a day and if the organization has set certain service levels to respond to specific queries in the incoming customer email messages, the organization may want to consider an email management solution. An organization that is sensitive to their customers' satisfaction, service

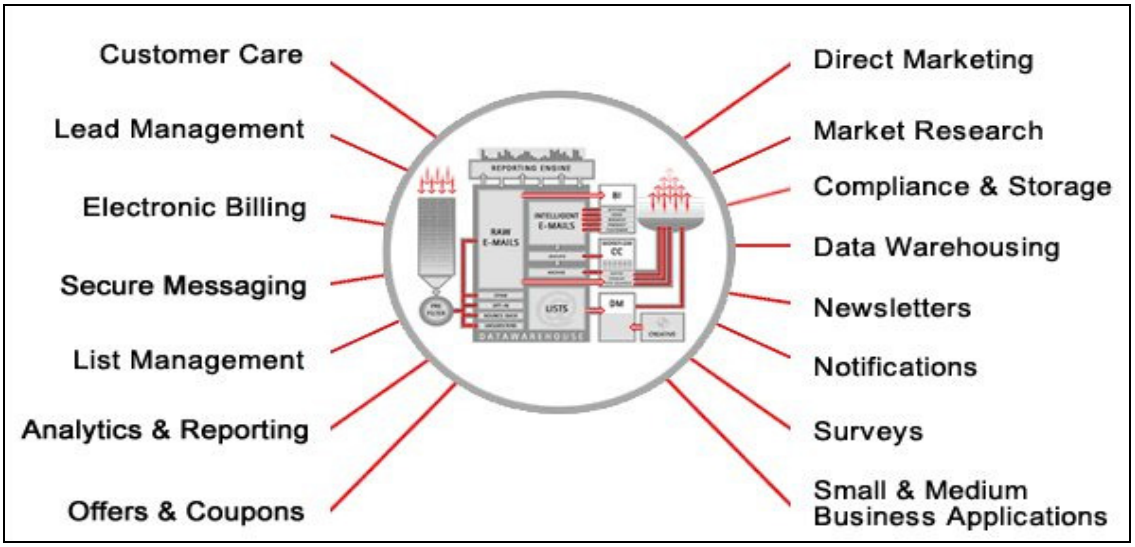
 

levels, and wants to track email statistics for future improvement would certainly want to consider using an email management solution.

## APPLICATIONS OF EMAIL MANAGEMENT

Figure 2 below shows a detailed list of business applications afforded by an email management platform.

**Figure 2 – Applications of Email Management**




Note: The list of applications shown above is an example of the types of applications and email management system may offer.

The following sub-sections provide real-life examples of the use of email management systems.

**I. JCPenney – Email Management from Crisis Management to Customer Service**

JCPenney deployed email management in 1996. In an article in Technology Review, *Dr. Email Will See You Now*, Deborah Shapley, wrote about how JCPenney used email management to support their crisis management efforts following the announcement by TV actress Ellen DeGeneres, during her prime time "Ellen" show that she was homosexual.[14] That ABC broadcast fueled a nationwide controversy, which spilled over to JCPenney, a major sponsor of the show. JCPenney found its fledgling presence on the World Wide Web inundated with email

[14] "Dr. E-mail Will See You Now. Is software that replies to customers automatically the key to success in e-commerce? Ask the doctor," http://www.technologyreview.com/featured-story/400629/dr-e-mail-will-see-you-now/, 2000.

messages of a kind and quantity it had never seen before. Anti-gay critics flamed DeGeneres and belted JCPenney for supporting her show. Supporters were just as vehement.

At the time, JCPenney had just implemented an email management system in pilot mode. Not only did the system go on routing and replying to regular queries about orders and returns, but it recognized that the "Ellen" messages didn't not fall into a preset category. Of course, humans staffing JCPenney's stores and catalog call centers were also getting calls about "Ellen." But the volume of complaints to any one site could not compare with the power, and immediacy, of the signal received by JCPenney's email message handling department. The email management system was reporting a sudden spike in the number of angry incoming email messages, and JCPenney's headquarters knew it had a major customer relations issue. Right away the Public Relations department drafted a statement for the company to use in reply to various e-mails regarding Ellen's announcement.

The email management system's early alert of the "Ellen" situation convinced JCPenney to deploy a full-scale enterprise email management system. At the time of the "Ellen" situation, JCPenney received about 1,200 email messages per month. By late 1999, the number had grown to 30,000 per month. Yet the Internet customer service staff only needed four people because of the power of the email management system's technology to sort and process these email messages. As discussed above, automating the process for responding to and sending email messages increases the number of email messages that can be processed per hour.

**II. The Growth of Email Management**

The success of customers such as JCPenney and others in deploying email management in the mid to 1990's to early 2000's helped convince other blue chip customers such as Nike, Citigroup, Procter & Gamble, Unilever, American Express, Calvin Klein and others, to also deploy email management solutions. Government organizations also saw the value of an email management solution. For example, U.S. Senate offices, including 30 U.S. senators, installed email management to manage constituent inquiries.

Companies sometimes started using email management systems because they were inundated with email messages on a topic. Kmart utilized an email management system when it was starting to deal with letters protesting its decision to stop carrying handgun ammunition. Since the system could batch and categorize together email messages by similar categories, it was able to quickly route the consumers' email messages to the appropriate department. Similarly, when Nascar driver Dale Earnhardt was killed, an email management system sorted email messages from customers who wanted to buy memorabilia from Kmart.

**III. Trans-media Marketing with Email and other Media**

Large Global 2000 companies also learned to use email management effectively to interact with their customers and partners. Calvin Klein deployed integrated email messages with TV advertising to generate as *Wired* magazine referred to it, one of the most "innovative advertising programs." In their use of email messages, an integrated marketing program allowed viewers exposed to the ckOne TV ad to send an email message directly to the characters in the commercials. The viewers were allowed to continue that conversation online.

## TECHNOLOGY FOR EMAIL MANAGEMENT

This section defines the technology necessary for email management, with key references to the technology paradigms used by large enterprises that have successfully deployed email management. In this section, we will provide both a strategic and tactical view of the systems architecture and infrastructure necessary to execute an email management system.

**I. The Technology Architecture for Email Management**

The technology to implement an email management system typically requires a tiered (or layered) architecture consisting of the following:

(1) User Interface Layer – This is typically web-based written in a web programming language such a HTML, JAVA or ASP, for example.

(2) Application Layer – This layer is the connective layer to process user interface requests across the other layers.

(3) Database Layer – This layer contains the data e.g. email addresses, customer information, email messages, etc. It is typically implemented as a relational database.

(4) The Email Server Layer – This layer contains the inbound and outbound mail servers for receiving and sending email messages.

(5) The Security Layer – This layer supports encryption of email messaging information, for situations where the access to email messages requires further restrictions.

***The details of the layers are provided below.***

User Interface layer

This is the layer that users of the email management platform interact with. This layer manages the user login process, the workflow interface where users read, write, edit and send response, and take other actions on email messages, view reports and perform various configuration changes. In the digital refinery diagram, module entitled "Workflow" is a part of the User Interface layer.

Application Layer

This layer handles all the core programs that perform data processing and calculations. When a user clicks on certain buttons or links, intense processing may be needed to respond to the action. There is also certain processing that takes place at regular intervals repeatedly throughout the day, for example, automatic content analysis of every incoming email message. All such processing takes place in the Application layer. In the digital refinery diagram "Business Intelligence", Reporting Analytics", and "Pre-filtering" are some of the modules that function in the Application Layer.

Database Layer

This layer stores all the data. The Database layer is considered the innermost layer of a three-tier architecture model. Typically this layer includes a large-scale database system. All the email messages and other data are stored securely in the database layer. The database layer is completely isolated from any direct access by users. When any user action requires access to data, for example, initiating a filtering process or running a report, the request from user interface layer is sent to the application layer and application layer will initiate certain software programs to respond to the request. These software programs running on application layer queries the database to produce required result-set and present it back to the user on the User Interface layer. The data warehouse shown in the Digital Refinery, along with data collections such as raw data, intelligent data, lists etc. resides in the database layer.

Email Server Layer

This layer handles the actual transmittal of email messages and web form data into the email management platform and responses and email messages out of the email management platform. These are specialized servers that are dedicated to manage email message traffic. On the inbound side of the Digital Refinery, "Data Capture" takes place within Email Server layer. On the outbound side of the Digital Refinery, "Delivery" takes place within Email Server layer.

Security layer

The security layer remains as an 'overlaid layer' on top of all the remaining four layers. This layer is also a combination of hardware and software components that maintains security of the platform, ensuring that unauthorized intrusions are detected and stopped from entering into the platform. Security approaches include simple methods such as secure socket implementation on servers to more complex methods involving direct access line, virtual private network (VPN) and firewall.

**II. Summary**

An email management system can be developed to minimize human involvement in the email management process. However, human intervention is desired in the final stages, which requires validation and dispatching responses through the email management system. Email management has evolved organically through a blend of in-house and outsourced "post offices" to manage email messages.

Personnel used to manage email messages come from diverse backgrounds --- few with any postal mail or email message processing backgrounds. There is currently high-turnover of personnel in such centers. Security and privacy standards vary significantly, without much consistency. As email management grows, the need for a trusted brand will become increasingly important. Consumers will want to know, "who is processing my email message?" and "Can they be trusted?"

The Postal Service could potentially develop an email management plug-in to allow customers easy access to this service. Plug-ins enable organizations to rapidly integrate sophisticated features into their websites and include such applications as credit card processing, surveys, shipping and fulfillment, maps and directions, and others. Consider a "Contact Us" button on an organization's website. A Postal Service-branded email management "Plug-In" could allow the organization to "drag and drop" the Postal Service plug-in on its website as the backend for processing "Contact Us" inquiries. To the organizations using a Postal Service-branded email management system, the backend would become seamless. The inquiries could be routed to the email management application, ran and operated by the Postal Service.

# Part 3 - Postal Service and Email Management

This part begins by summarizing the *Market Opportunity for Email Management*, and then proceeds to discuss *Potential Email Management Opportunities for the Postal Service.* The main challenges are outlined in the section titled *Challenges in Deploying Email Management Service*. Then, we consider *How the Postal Service May Offer Email Management Service* through three potential deployment models. Earlier experience in provisioning email management services to large and small companies are used to develop a high-level economic model in *Economics of Email Management Services* for each of the three possible deployment models identified. This part ends by presenting a matrix in the *Summary of Results* that summarizes the challenges and economic returns across each deployment model.

## MARKET OPPORTUNITY FOR EMAIL MANAGEMENT

The Postal Service processed approximately 168 billion postal mail pieces in fiscal year (FY) 2011. Table 5 presents key statistics reflecting the potential market opportunity for email management.

Therefore, SMBs constitute the vast majority of the market for email management services and could provide a market opportunity for the Postal Service. As discussed above, a reasonable fee for managing email messages is $2 for inbound messages and $0.02 for outbound messages. Thus, the potential annual market opportunity for inbound email management processing for SMBs is substantial.

To take advantage of this market opportunity, all the components of email management are required. Currently, of the large enterprises, less than 30% employ sophisticated email management solutions. Of the nearly 10 million SMBs, only a fraction has implemented any reliable email management solutions. Millions of SMBs will increasingly have to contend with inbound email messages. Answering them properly will mean the difference between retaining and losing customers.

**Table 5 – Postal Mail and Email Statistics**

| **Overall Statistics** | **Volume** |
|---|---|
| Mail pieces processed by the Postal Service annually in FY 2011 | 168 billion |
| Email messages transmitted worldwide annually in FY 2011 | 144 trillion[15] |

| **Email Statistics on Small Medium Businesses (SMBs)** | **Volume** |
|---|---|
| SMBs in the United States | 10 million[16] |
| Inbound customer service email messages received by an SMB per day | 25[17] |
| Inbound customer service emails received by an SMB per month | 750[18] |
| Inbound customer service email messages received by SMBs in US annually | 90 billion[19] |
| Email list size of typical SMB | 2,000 email addresses[20] |
| Outbound email marketing campaigns per year | 12 (one per month) |
| Outbdound email marketing messages sent by an SMB per year | 25,000 email messages |
| Outbound email marketing messages across 10,000,000 SMBs per year | 250 billion email messages |

| **Email Statistics on Large Enterprises** | |
|---|---|
| Large enterprises in the United States | 100,000[21] |
| Inbound customer service email messages received per day per business | 300[22] |
| Inbound customer service email messages received per month per business | 9,000 |
| Inbound customer service email messages annually per business | ~100,000 |
| Inboun customer service email messages annually across 100,000 businesses | 10 billion |

[15] The Radicati Group projects that the average number of email messages transacted daily, per email account, between 2011 and 2015 were 105, 110, 115, 120, and 125, respectively. (http://www.radicati.com/wp/wp-content/uploads/2011/05/Email-Statistics-Report-2011-2015-Executive-Summary.pdf). The total number of email system users in 2011 was 3.2 billion (http://i.huffpost.com/gen/340369/EMAIL-29TH-ANNIVERSARY.jpg). Thus, the total number of email messages transmitted worldwide in 2012 is an estimated 144 trillion, based on an interpolation of 3.2 billion email accounts in 2011 with approximately 45,000 email messages per email account.

[16] SMBs included those companies with less than $10 million in assets as noted by the Internal Revenue Service (place link here)

[17] Based on SMB data, on average an SMB customer receives 25 inbound customer email messages.(place linke here)

[18] 30 days multiplied by 25 email messages per day.

[19] Based on SMB data, on average an SMB customer receives 25 inbound customer email messages, or 9,000 email messages per year (25 email messages/day x ~360 days/year). Across 10,000,000 SMBs, this calculates to 90,000,000,000 (90 billion) email messages per year.

[20] Based on data across a variety of SMBs, the average SMB email address list size is approximately 2,000.

[21] Large enterprises include those companies with more than 100 employees. According to the US Census of 2008, this is at least 100,000 businesses (http://www.census.gov/econ/smallbus.html) of this type.

[22] Based on large enterprise data, on average a large enterprise customer receives 9,000 inbound customer email messages per month, or 300 email messages per day.

## POTENTIAL EMAIL MANAGEMENT OPPORTUNITIES FOR THE POSTAL SERVICE

The Postal Service may have an opportunity to take advantage of the potential market for inbound and outbound email management services. The trends and features itemized below further illustrate the Postal Service's unique position.

**I. The Postal Service is in the Business of Managing and Processing Mail**

The Postal Service, for over 230 years, has been in the business of managing mail. A central thesis of this document is that the Postal Service is in the "**mail**" business, be it print or electronic. Once it is clear that email is the electronic version of interoffice, inter-organizational paper-based mail system, the reality of the Postal Service being in the email management business seems to be a natural extension of the Postal Service brand. The initial thought of postal workers, who currently process physical mail, processing email messages may initially sound odd. However, when one considers how many companies are routinely outsourcing their email message processing to companies in India and Philippines, who have built teams of "electronic postal workers" to process email messages, the opportunity may not sound unconventional. Additionally, the Postal Service may be able to leverage its reputation as a trust source to offer this service.

**II. The Postal Service Has the Brand of a Trusted Service Provider**

The Postal Service has established itself as a trusted service provider. Rarely does one even think about the security or privacy of a postal letter as it is transacted from one to another across the Postal Service infrastructure. By contrast, current email management providers have no consistent principles of security and privacy. The compliance standards developed by the Postal Service for managing postal mail may be able to support email management.

The organizational structure of the Postal Service inherently protects against corruption among its 500,000 employees. The Postal Service has its own law enforcement and oversight arms (the Postal Inspection Service and the Postal Service-OIG), which can detect and enforce immediate correction of any criminal activities or improprieties identified within its systems. The USPS-OIG also provides audit oversight to help detect and prevent fraud, waste, abuse and mismanagement. The importance of these enforcement and oversight features of the Postal Service cannot be overemphasized, as they are keys elements to providing "trust" to consumers. By contrast, private email management call centers currently do not have any external oversight. Given an email message is as important as a letter, it is natural to require that email message processing centers also have such external oversight, built-in and inherent to the Postal Service.

Postal Service workers have been trained, imbued by more than 230 years of experience with the mail service ethos of respecting confidentiality and knowing how to handle the mechanics of sorting, handling and delivery. For less than $2 per email message, smaller enterprises in local communities could hire Postal Service branded personnel to manage their email messages. Postal Service workers, for example, could be situated in their existing local post office locations, manage, analyze and send responses based upon pre-determined answers. The value to those enterprises using such a professional service could be immense.

**III. The Postal Service Can Address the Growing Concerns on Email Security and Privacy**

Gmail, Yahoo, Hotmail's privacy and security policies have become of concern to many in the public. These private providers have full rights to read one's personal email message content, and reuse that content to deliver advertising. Subscription to these services involves a transaction of conceding one's privacy for "free" services. SMBs and individuals may be willing to pay a fee for email management and processing, if there was a greater degree of assurance that their email messages were protected. The trusted brand of the Postal Service may be able to deliver a sense of security that is currently lacking.

**IV. The Postal Service Can Bring Email Management Rapidly to Businesses**

According to a study conducted by Jupiter Research Corporation (currently Forrester Research) in 2001[23], if a customer is dissatisfied with the way his or her email message was treated by a company, nearly 80% of respondents said that they are not likely to do online business with that company. Furthermore, over 50% of the respondents said that they are also not likely to do offline business with that company. Many businesses either do not manage email messages or attempt to do it with methods and tools not intended for effective email management. The ubiquitous reach of the Postal Service provides the opportunity for it to offer email management services to a broad base of businesses that would adopt such a solution, if simply made aware of its existence.

The above trends and nature of the Postal Service, therefore, position the Postal Service to be a potential provider of email management services.

[23] Campbell, Christine, "Poor online service deters offline commerce", Jupiter Communications, 2001.

## CHALLENGES IN DEPLOYING EMAIL MANAGEMENT SERVICE

Deploying email management services at the Postal Service could have many advantages. However, this initiative is not without challenges. Understanding the nature of these challenges is critical to deciding whether and how the Postal Service should pursue email management services.

### I. Challenge #1: Legal

The Postal Service may be prohibited from offering email management services, under the law that limits its ability to provide "non-postal" products and services. As discussed in greater detail below, the Postal Regulatory Commission is responsible for making a determination as to whether a potential new product or service would be considered "non-postal." The definition of "postal" services under the law may need to be expanded to include email management services, if the Postal Regulatory Commission determines that the service is "non-postal." Such a change to the law may be difficult, as Congress has raised concerns about the Postal Service's past efforts to enter into the digital arena.

The Postal Service had pursued digital products and services in the area of e-commerce in the past. In 2001, a GAO report stated, "… none of the e-commerce initiatives…were profitable"[24]. GAO also highlighted that the e-commerce initiatives were not profitable during a 2009 hearing before the U.S. House of Representatives. GAO stated that in light of this poor performance, as well as concerns about risks and fair competition issues, the Postal Service's ability to offer non-postal products and services should be carefully considered[25]. These prior attempts may make Congress and the Postal Regulatory Commission take a very cautious approach when requests are made for exploring new digital products and services.

In April 2012, however, the U.S. Senate passed the 21st Century Postal Service Act of 2012, which includes a provision that would allow the Postal Service to provide non-postal products and services under certain criteria. Specifically, the Postal Service would be allowed to offer non-postal products and services that:

- Use the processing, transportation, retail network, or technology of the Postal Service;

[24] United States General Accounting Office – GAO, December 2001, Update on E-Commerce Activities and Privacy Protections, Page 17.

[25] United States General Accounting Office - GAO, November 2009, Financial Challenges Continue, with Relatively Limited Results from Recent Revenue-generation Efforts, Page 9.

- Are consistent with the public interest and a demonstrated or potential public demand for the Postal Service to provide the services instead of another entity providing the services or in addition to another entity providing the services;
- Do not create unfair competition with the private sector; and
- Have potential to improve the Postal Service's net financial position.

This bill has not yet been considered in the House, but this development indicates that the Postal Service may have the opportunity in the future to offer digital products and services, such as email management services.

In the current scenario of being a physical mail carrier, Postal Service is also legally prevented from opening a letter or package without a warrant issued for probable cause. It is unclear how the U.S. Congress would have to make legislative changes to allow Postal Service employees to open and read the content of an email message in order to provide email management services.

The Fourth Amendment of the U.S. Constitution provides all persons the right to be free from search and seizure absent a warrant issued on probable cause. The Postal Service characterizes the following classes of mail, for example, as "sealed against inspection":

- First-Class Mail items
- Priority Mail items
- Express Mail items
- International transit mail

If the Postal Service provides an email management service, Postal Service employees would need to open some email messages and review the content. It needs to be explored if the same law of protecting the physical mail applies to email messages as well. If the Postal Service were to provide an email management service, it is likely the Postal Service would publish regulations, policies and a detailed user agreement dictating the manner in which that service would operate. Currently, users of email systems such as Gmail, HotMail, Yahoo, etc. agree to a Privacy Policy, which details how the email systems provider treats email messages of the user. What needs to be explored is whether the Postal Service can also offer such privacy policies governing the management of email messages through federal law. The email management service may need to provide a user agreement in which the users consent to a search of sent/received email messages under limited circumstances. Private email systems providers' user agreements typically contain a form of user consent to search email messages for various purposes, which could be helpful as a benchmark for the Postal Service.

After Postal Service's ability to open and read email messages is established, then legislative changes need to be explored relative to the responsibilities of Postal Service employees with regard to the content of the email messages. For example, if a particular email message contains information that threatens public safety (a terrorist threat), the responsibilities for Postal Service may need to be defined. Additionally, a liability, or at least responsibility, may exist for the Postal Service to report a company if, during the analysis of its emails, it becomes apparent that the company is operating unethically or illegally.

It is unclear precisely how the laws would govern this area, and what responsibilities Postal Service would have in operating an email management service. Whether the Postal Service would have a duty to regulate an email management service for threatening or dangerous electronic communications is currently unknown.

**II. Challenge #2: Regulatory**

This is the overarching challenge in providing new products and services. Assuming the Postal Service could obtain approval from the Postal Regulatory Commission (PRC), the Postal Service would still face restrictions on new products/services, which differ depending on whether that product/service is classified as a "postal" or a "non-postal" product/service. The Postal Accountability and Enhancement Act (PAEA) limits the Postal Service's authority to offer non-postal products and services to those that were offered as of January 1, 2006, subject to re-approval every 2 years by the PRC. Therefore, under PAEA, the only new products and services Postal Service can offer are those that are considered "postal" products and services. Pursuant to 39 U.S.C § 102 (5), a "postal service" includes "the delivery of letters, printed matter, or mail-able packages, including acceptance, collection, sorting, transportation, or other functions ancillary thereto …" The PRC has previously taken the position that "postal" services involve the physical delivery of letters.

If the PRC classifies the email management service as a "non-postal" service, then the Postal Service would not be able to offer this service. If the PRC classifies email management service as a "postal" service, then the Postal Service needs PRC approval to add this new service to the competitive products list (39 U.S.C. § 3642(a)). Also, before the Postal Service requests the PRC to amend the product list, the Postal Service has the authority to offer a "market test" for the email management service for up to 24 months. To qualify, a product must be significantly different from any current Postal Service product, not cause market disruption to mailers, and be classified as either market dominant or competitive.

The laws (*e.g.*, PAEA) dictating the rules on offering of new products by Postal Service and the exact restrictions and wordings including specific sections, need to be explored, and potentially amended, prior to the Postal Service pursuing mail management services.

**III. Challenge # 3: Union**

The Postal Service would likely need to negotiate changes to the collective bargaining agreements with each of its unions to include a new job description or craft to accommodate the service. The likelihood of coming to agreement on such changes and the amount of time required to negotiate such potential changes are currently unknown.

**IV. Challenge #4: Consensus**

The aforementioned challenges (Legal, Regulatory, and Union) include the inherent challenge of obtaining a general agreement among various groups regarding whether email management services would be within the purview of the Postal Service's mission. For example, the individual unions would have to agree to collective bargaining agreement changes to allow postal service employees to perform work related to email management services. Collective bargaining agreements involve complex negotiations and require significant time and resources to reach agreement. Introducing a new service, as well as changing the roles and responsibilities of Postal Service employees would likely be particularly challenging.

**V. Challenge #5: Cultural**

Although the Postal Service culture has become more receptive towards changing market demand, the Postal Service culture still remains as one of the overarching challenges for the implementation of innovative solutions. Therefore, there must be an ongoing effort to educate postal management and employees by presenting cutting edge solutions and potential benefits. Such education is necessary, and, in many ways, independent of just the email management service offering.

**VI. Challenge #6: Labor Rate**

The fee for processing an email message to the end customer may be prohibitive with a relatively high labor rate. The cost to process email messages may be reduced through enhanced training, and by augmenting the intelligent analysis and categorization methodologies of the email management technology. For example, one of the largest retailers in the world using email management technology enables one human customer service representative to process upwards of nearly 20 email messages per hour, rather than the average of 12 email messages per hour under a typical email management system.

### VII. Challenge #7: Infrastructure Acquisition

The Postal Service must ensure that it can provide the email management service from its current capacity. The Postal Service will likely need to acquire software and/or hardware for supporting email management. Such infrastructure can either involve an upfront capital expenditure by the Postal Service for acquisition and maintenance of equipment or a rental model using a cloud-based service provider. The former may prove more cost efficient based on the volume of email messages likely to be processed.

### VIII. Challenge #8: Practicability of Utilizing Postal Service Employee Time

Utilizing available hours from postal employees needs further examination for it is not easily quantifiable and/or predictable. For example, idle time can occur any given day and any given time of the day for various durations. In addition, the peak workload for e-mail management services may fall at the same time as the peak workload for Postal Service mail processing operations. Therefore, the alignment of available resources due to idle time may not correlate to the needed workload for email management services.

## HOW TO OFFER EMAIL MANAGEMENT SERVICE

How can the Postal Service offer email management services to businesses? This paper considers three possible broad methods. One approach could be to retrain and use existing Postal Service employees to process email messages. Another approach could be to use Postal Service's existing call center personnel. And, yet another method could be to leverage the Postal Service's trusted brand to create an ecosystem through which technologies and partners may interact to provide the services to the end organization.

These three broad approaches are denoted as follows: (1) *Tightly Coupled* - where email management services may be provided through Postal Service's permanent employees; (2) *Semi-Coupled* - where email management services may be provided through Postal Service's existing outsourced call center personnel; and, (3) *Loosely Coupled* - where a platform carrying the Postal Service trusted brand may be provisioned through which an ecosystem of partners can interact to deliver email management.

### I. Tightly Coupled Model

In this model of delivering email management services, the Postal Service would use its employees who would work within a Postal Service-owned/managed infrastructure for hosting core technology and information security components as well as the employees. Employees

would undergo extensive retraining for customer service, reading, responding and taking certain actions on email messages, as well as how to execute email campaigns using an email management platform for organizations that may become customers of the Postal Service. In this model, the Postal Service could explore an opportunity to utilize a certain portion of idle worker-time of various employee groups. While the revenue generated may not be significant, this model may be worth considering.

**II. Semi-Coupled Model**

In this deployment model, the Postal Service could use call centers that are currently contracted by Postal Service to handle customer service calls. The infrastructure used could be a hybrid-model with core technology and information security components located within the Postal Service, while the staffs could remain in their current locations. As an organization, the Postal Service has experience with customer service; therefore, staff could be trained to read, respond and take certain actions on email as well as execute marketing campaigns using the email management platform. The Postal Service may be able to generate revenue by utilizing the customer service team comprising of contractors. At a reasonable expectation of service, agents processing 12 email messages per hour and the Postal Service charging $2 fee per email message, the Postal Service stands to generate over $46,000 in gross profit per month in this model.

**III. Loosely Coupled Model**

In this model, the Postal Service could offer a Postal Service-branded email management platform for one or more external customer service providers. In this model, external staff could perform all email management services and Postal Service employees would not be utilized. Idle worker time would not be "recovered" in this model. The infrastructure used would be a hybrid-model with core technology and information security components located within the Postal Service while the partnering companies' staffs remain in their locations. The Postal Service would need to hire a team of Information Technology (IT) staff to monitor and maintain the technology infrastructure and security components. Even with the utilization of IT resources for monitoring and maintaining technology infrastructure and security components, the potential to generate revenue may be high in this model.

## ECONOMICS OF EMAIL MANAGEMENT SERVICES

Based on the analysis presented herein, it appears that the offering of email management service by the Postal Service may lead to new sources of revenue, to varying degrees based on the approach the Postal Service may take to offer the service. For the purpose of this

exploration, we limit our economic analysis to two broad areas: (1) Inbound customer service and (2) Outbound marketing. Although there are challenges, exploring the potential revenues from offering an email management service can aid in deciding whether these economic returns offset aforementioned challenges. **The economic analysis done herein is a high-level one based on gross profit alone, and provides a framework for the key variables involved in email management. This analysis is by no means,** In this report, gross profit is defined as the total revenue generated from email management minus fully-loaded costs of labor for processing email messages. The gross profit estimates do not include additional costs associated with implementing an email management system. The start-up infrastructure and maintenance costs could be significant.

**I. Inbound Customer Service**

In this section, we explore the potential revenue that can be generated from one aspect of email management: managing inbound customer inquiries. To explore this opportunity, we develop revenue projections for three deployment models. These projections are based on particular modeling assumptions and modeling approaches, which yield result for the three deployment models.

Below we review three models of email management deployment: (1) tightly coupled, (2) semi-coupled and (3) loosely coupled.

A. Tightly Coupled Model

Under this model, the Postal Service would own and manage the technology and security infrastructure and use its own employees to support the email management system. The Postal Service could use existing employees on stand-by time to help provide the human intervention needed at the end of the process. Postal Service employees would have to undergo customized training in the areas of customer service, reading and analyzing the content of email messages, responding to email messages, and other functions needed to operate the email management system.

The Postal Service could generate an estimated $419,664 per month, or over $5 million per year, under this model. This estimate is based on the following assumptions:

- The Postal Service could use existing employees on stand-by time to provide email management services, so would not have to pay additional employees to conduct this work.
- The term *idle worker time* consists of three elements:

- (1) The *stand-by* time of a permanent employee who though available to perform job duties simply does not have work assigned to them and hence placed on "stand-by" until work is available for them;
- (2) The *stand-by* time of limited duty employees who can only perform certain duties based on their physical limitations (for example, such an employee may be given only the task of letter sorting; if there are no more letters to sort, and large parcels need to be sorted, they are put on "stand-by"); and,
- (3) Those employees who are employed but are on disability since it was determined that their particular situation does not allow them to perform physically demanding job duties.
- Rather than assuming every hour of standby time is available for email management services, we think assuming half the standby hours (or 17,846 hours) would be actually be usable for email management services.

*Modeling Approach*

For the tightly coupled model, the modeling approach considers the amount of idle worker time available in a month and explores how much revenue could possible be generated utilizing unused time, assuming that half of the standby hours can be used to process email messages. This approach takes two variables into consideration: (1) the number of email messages that can be processed by a Postal Service employee per hour; and, (2) the fee that an SMB business customer may be willing to pay for one customer email message inquiry processed by the Postal Service.

*Modeling Results*

In Table 6 below, the top row represents number of email messages an employee may process per hour. The first column represents per-email message fees the Postal Service may be able to charge its email management service customers. The matrix shows the gross profit that can be generated each month utilizing idle worker time available in 2012.

Note on Calculating Gross Profit

In calculating gross profit for this case, the total revenue is generated from the fees charged for email management service minus the fully-loaded costs of labor for processing email messages. Since the cost of available stand-by time is a "sunk" cost, there would be no additional labor cost for processing emails. Therefore, the revenue equals the gross profit. The Postal Service's cost may, however, include a cost to acquire software and/or hardware for supporting email management. Such infrastructure costs would decrease the gross profit.

**Table 6 - Gross Profit generated each month utilizing the Postal Service employees**

| Email Message Fees Postal Service charges the | Number of email messages processed by an employee per hour | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 7 | 9 | 11 | 12 | 13 | 14 |
| | **$ 0.5000** | $ 61,201.00 | $ 78,687.00 | $ 96,173.00 | $ 104,916.00 | $ 113,659.00 | $ 122,402.00 |
| | **$ 0.6575** | $ 80,479.32 | $ 103,473.41 | $ 126,467.50 | $ 137,964.54 | $ 149,461.59 | $ 160,958.63 |
| | **$ 1.0000** | $ 122,402.00 | $ 157,374.00 | $ 192,346.00 | $ 209,832.00 | $ 227,318.00 | $ 244,804.00 |
| | **$ 1.5000** | $ 183,603.00 | $ 236,061.00 | $ 288,519.00 | $ 314,748.00 | $ 340,977.00 | $ 367,206.00 |
| | **$ 2.0000** | $ 244,804.00 | $ 314,748.00 | $ 384,692.00 | $ 419,664.00 | $ 454,636.00 | $ 489,608.00 |
| | **$ 3.0000** | $ 367,206.00 | $ 472,122.00 | $ 577,038.00 | $ 629,496.00 | $ 681,954.00 | $ 734,412.00 |
| | **$ 4.0000** | $ 489,608.00 | $ 629,496.00 | $ 769,384.00 | $ 839,328.00 | $ 909,272.00 | $ 979,216.00 |

The red cell indicates the scenario, discussed in more detail above, where a customer is willing to pay $2 per email message processed, and a human operator can process on average 12 email messages per hour through the use of email management technology.

B. Semi-Coupled Model

Under this model, the Postal Service would own and manage the technology and security infrastructure, but would pay contracted call center representatives to support the email management system. The call center representatives would have to undergo customized training in the areas of customer service, reading and analyzing the content of email messages, responding to email messages, and other functions needed to operate the email management system.

The Postal Service could generate an estimated $46,043 per month, or $552,516 per year, under this model. This estimate is based on the following assumptions:

- A call center representative is available to work 150 hours a month, after considering vacation, holidays and other absences;
- To compare with the tightly coupled model where at usable number of 17,846 stand-by hours was used, we divide this number of hours by 150 hours to calculate that a total of 119 full-time Postal Service call center representatives would be available for email management servicing.
- A call center representative using an email management tool could process up to 12 email messages per hour.
- The fully-loaded cost of an average call center representative is $21.42 per hour, which is based on one call center representative being able to process 6 email messages per hour (without using a email management tool) at a cost of $3.57 per cost of processing one email message (6 x $3.57).

*Modeling Approach*

The semi-coupled model considers the existing Postal Service call center, which currently provides customer service support for phone calls and email messages. This model takes the following two variables into consideration: (1) the number of email messages that can be processed by a call center representative per hour; and (2) the fee an SMB may be willing to pay the Postal Service to process an inbound customer service inquiry.

*Modeling Results*

The results of this analysis are summarized in Table 7. The top row of Table 7 is the number of email messages a call center representative may process per hour. The first column shows per-email messages fees Postal Service may charge its email management service customers.

Note on Calculating Gross Profit

In calculating gross profit for this case, the total revenue is generated from the fees charged for email management minus the fully-loaded costs of labor for processing email messages. For this case, the revenue is the amount generated by the use of 119 call center representatives processing the email messages noted per hour. The costs are the labor costs of those call center representatives. The matrix contains the revenue minus these costs. As in the tightly-coupled model, the Postal Service would likely need to acquire software and/or hardware to support an email management system. Such infrastructure costs would decrease the gross profit.

**Table 7 - Gross Profit generated each month utilizing 119 call center representatives working average of 150 hours a month**

| | Number of email messages processed by a service agent per hour | | | | | | |
|---|---|---|---|---|---|---|---|
| Email Message Fees Postal Service charges the | | 7 | 9 | 11 | 12 | 13 | 14 |
| | $ 0.5000 | $ (319,800.32) | $ (301,954.32) | $ (284,108.32) | $ (275,185.32) | $ (266,262.32) | $ (257,339.32) |
| | $ 0.6575 | $ (300,125.11) | $ (276,657.62) | $ (253,190.13) | $ (241,456.38) | $ (229,722.64) | $ (217,988.89) |
| | $ 1.0000 | $ (257,339.32) | $ (221,647.32) | $ (185,955.32) | $ (168,109.32) | $ (150,263.32) | $ (132,417.32) |
| | $ 1.5000 | $ (194,878.32) | $ (141,340.32) | $ (87,802.32) | $ (61,033.32) | $ (34,264.32) | $ (7,495.32) |
| | $ 2.0000 | $ (132,417.32) | $ (61,033.32) | $ 10,350.68 | $ 46,042.68 | $ 81,734.68 | $ 117,426.68 |
| | $ 3.0000 | $ (7,495.32) | $ 99,580.68 | $ 206,656.68 | $ 260,194.68 | $ 313,732.68 | $ 367,270.68 |
| | $ 4.0000 | $ 117,426.68 | $ 260,194.68 | $ 402,962.68 | $ 474,346.68 | $ 545,730.68 | $ 617,114.68 |

The red cell indicates the most likely scenario, discussed in more detail above, where a customer is willing to pay $2 per email message and a call center representative can process on average 12 email messages per hour through the use of email management technology.

C. Loosely Coupled Model

Under this model, the Postal Service would leverage its brand name and reputation as a trusted service provider to offer a Postal Service-branded email management system. The Postal Service could hire a team of information technology staff to monitor and maintain the technology infrastructure and security components of the system. Neither Postal Service employees nor current call center representatives would be involved in the email management system.

The Postal Service could generate an estimated $22.8 per month, or $273.6 million per year, under this model. This estimate is based on the following assumptions:

- There are 10 million SMBs in the U.S.;
- Each SMB receives on average 25 customer service inquiry email messages per day or 750 email messages per month, making the total market of 7.5 billion email messages per month[26]; and
- The Postal Service would receive 30% of the fee charged to the end customer in a revenue sharing model.

*Modeling Approach*

The loosely coupled model considers the approach of an 'outsourced' customer service organization, duly audited and approved by the Postal Service, using a Postal Service-branded email management platform (or 'ecosystem') for processing inbound customer inquiries. The Postal Service would operate the infrastructure solely or in collaboration with a partner while providing its trusted brand and other services such as oversight, for example. In this calculation, we assume that a partner is involved who provides the platform and that the cost of that platform (or revenue to the partner) is 70% (seventy-percent) of the revenues generated for every email message processed through the platform. The two variables taken into consideration are: (1) a percentage of the total potential annual email message volume that could flow through the Postal Service branded platform and (2) the amount of royalty fee the Postal Service could receive.

*Modeling Results*

Table 8 provides the summary analysis of the loosely coupled model. The top row is a percentage of the total market share of 7.5 billion email messages per month (the total possible

[26] Based on SMB data, on average an SMB customer receives 25 inbound customer email messages, or 9,000 email messages per year (25 email messages/day x ~360 days/year). Across 10 million SMBs, this calculates to 90 billion email messages per year, or approximately 7.5 billion email messages per month.

SMB email messages that could be processed) by the Postal Service. The first column is the per-email message processing fee which the end customer could be charged.

Note on Calculating Gross Profit

In calculating gross profit for this case, the total revenue is generated from the fees charged for email management minus the fully-loaded costs of labor for processing email messages through the platform. For this case, the revenue is the amount generated based on the modeling scenarios shown in Table 8 minus the 70% cost (or revenue share) due to the partner.

**Table 8 – Gross profit generated each month if Postal Service collaborated with external customer service providers to offer email management**

| | Percentage of SMB email management market Postal Service could acquire as market share | | | | | | |
|---|---|---|---|---|---|---|---|
| Email Message Fees Postal Service charges | | 0.12% | 0.25% | 0.50% | 0.60% | 0.75% | 1.00% |
| | $ 0.5000 | $ 1,350,000.00 | $ 2,812,500.00 | $ 5,625,000.00 | $ 6,750,000.00 | $ 8,437,500.00 | $ 11,250,000.00 |
| | $ 0.6575 | $ 1,775,250.00 | $ 3,698,437.50 | $ 7,396,875.00 | $ 8,876,250.00 | $ 11,095,312.50 | $ 14,793,750.00 |
| | $ 1.0000 | $ 2,700,000.00 | $ 5,625,000.00 | $ 11,250,000.00 | $ 13,500,000.00 | $ 16,875,000.00 | $ 22,500,000.00 |
| | $ 1.5000 | $ 4,050,000.00 | $ 8,437,500.00 | $ 16,875,000.00 | $ 20,250,000.00 | $ 25,312,500.00 | $ 33,750,000.00 |
| | $ 2.0000 | $ 5,400,000.00 | $ 11,250,000.00 | $ 22,500,000.00 | $ 27,000,000.00 | $ 33,750,000.00 | $ 45,000,000.00 |
| | $ 3.0000 | $ 8,100,000.00 | $ 16,875,000.00 | $ 33,750,000.00 | $ 40,500,000.00 | $ 50,625,000.00 | $ 67,500,000.00 |
| | $ 4.000 | $ 10,800,000.00 | $ 22,500,000.00 | $ 45,000,000.00 | $ 54,000,000.00 | $ 67,500,000.00 | $ 90,000,000.00 |

*ISP – Independent Service Provider

In Table 8, by way of example, as indicated by the red cell, the Postal Service may be able to generate $22.8 million per month – or $273.6 million per year – in gross profit, assuming it obtained 0.5% of the total market share, or 38 million email messages per month, at a rate of $2 per e-mail message, with a revenue sharing arrangement of 30%.[27] This total is calculated as follows: the total revenue of $76 million (generated by processing 38 million email messages at the rate of $2 per email message) minus $53.2 million (70% due to the partner).

## II. Outbound Marketing

In addition to assisting organizations in managing their inbound email messages, there may be an opportunity for the Postal Service to generate revenue by offering services that would manage outbound email messages. Specifically, the Postal Service could assist organizations by providing targeted email messages and other email communications to specific people through an outbound email management service. Similar to the Loosely Coupled model, the Postal

[27] Revenue sharing at the rate of 30% is standard among most distribution agreements in the software and services industry, http://softwareceo.com/forum/thread/1296/Commission-rate-for-1099-sales-agents/ .

Service could leverage its brand name and reputation as a trusted service provider. The Postal Service could hire a team of information technology staff to monitor and maintain the technology infrastructure and security components of the system.

The Postal Service could generate an estimated $250 million per year by offering outbound email management services. This estimate is based on the following assumptions:

- A typical SMB would be willing to pay $0.02 per outbound email marketing message. This fee is based on the current pricing across multiple providers of email marketing services to SMBs.
- The cost of sending outbound email marketing messages is much lower than the processing of an inbound email message since the outbound message transmission is completely automated, whereas inbound email processing requires human interaction;
- A typical SMB may send out 25,000 email marketing messages annually.
- There are 10 million SMBs in the U.S.
- 250 billion marketing email messages per year sent by SMBs.
- Postal Service acquires 5% of the SMB total market share. This is a reasonable assumption because nearly ten times more SMBs use outbound email marketing than inbound email management, given the ease of access to email marketing tools versus email management services. Furthermore, nearly all businesses recognize the need to do marketing.

Modeling Approach

The modeling approach is based on simply multiplying the projected Postal Service market share by other relevant parameters.

Modeling Results

Based on these assumptions, the Postal Service may be able to generate $250 million in annual revenue, as calculations in Table 8 shows.

**Table 9 – Potential gross revenue generated annually by The Postal Service from outbound email marketing service**

| Type | Metric |
|---|---|
| Email marketing messages sent by SMBs annually | 250 billion |
| Percentage market share the Postal Service could acquire | 5% |
| Email marketing messages the Postal Service could acquire annually | 12,500,000,000 |
| Fee paid from transmitting one email marketing message | $ 0.02 |

| | |
|---|---|
| Total annual revenue | $ 250 million |

## SUMMARY OF RESULTS

The Postal Service may want to consider the three deployment models to enter into the email management business. The Postal Service may implement any one or all three of the business models. Each business model presents challenges as well as different economics to the Postal Service.

**I. Tightly Coupled Model**

The tightly coupled model provides a mechanism to utilize the idle worker time available of Postal Service permanent employees. The revenue generated by this model may not generate a profit or be sufficient to even offset the amount Postal Service may spend toward idle worker time, if such available time is completely utilized for the service. However, any revenue generated in this model may be considered gross profit because the Postal Service has already spent this cost on the stand-by hours of the employees.

**II. Semi-Coupled Model**

The semi coupled model offers the Postal Service an option to use its existing infrastructure to process inbound email message inquiries. Considering 119 Postal Service call center representatives working an average of 150 hours a month, the Postal Service may be able to generate gross profit of $46,042 monthly ($552,504 annually) using Postal Service call center representatives processing 12 email messages per hour at a per email message rate of $2. The operational efforts would involve hiring and training of Postal Service call center representatives.

**III. Loosely Coupled Model**

If the Postal Service could acquire a 0.50% market share and charge $2 per email to the end customer, the Postal Service may be able to generate over $273 million per year, based on 30% revenue sharing model.

**IV. Outbound Email Marketing**

In addition to inbound customer service revenue for the loosely coupled model, we also estimate that the Postal Service could generate an additional $250 million annually, assuming a 5% market share penetration, from outbound marketing.

# Part 4 - The Path Forward

This part serves to provide analysis and a perspective to help support decision-making on whether the email management is a viable service opportunity for the Postal Service. This part also discusses additional "experiments" the Postal Service would need to execute to gain further understanding on the viability of different models. In the section on *Future Directions and Issues*, we explore the possible directions that the Postal Service can take relative to the email management based on the detailed analysis provided earlier. Then, the section *Identification of Immediate Opportunities* serves to focus on some immediate opportunities. To support the development of these immediate opportunities, a *Proposal of Research Projects,* provides the Postal Service a guide, if it decided to take the logical next step. The next step would entail identifying tangible and concrete "experiments" that may be executed in a limited time frame to validate the theoretical, operational, and economic aspects of the models reviewed. The final section *Conclusions* summarizes the key findings and proposes next steps.

## FUTURE DIRECTIONS AND ISSUES

Based on the previous analysis of economic projections, email management may provide an opportunity for the Postal Service to generate new revenue. However, there are challenges, which need to be overcome to take advantage of the economic opportunities. Table 9 summarizes the challenges and risk levels associated with each of the three deployment models. These challenges and risk levels represent our view, based on our research, knowledge, and experience in these areas.

**Table 10 - Challenges and risk level associated with the three business models**

| Challenge | Legal | Regulatory | Union | Consensus | Cultural | Labor Rate | Infra-structure | Practic-ability |
|---|---|---|---|---|---|---|---|---|
| **Tightly coupled** | **High** | **High** | **High** | **High** | **High** | **Medium** | **Medium** | **High** |
| **Semi-Coupled** | **High** | **High** | **Low to Medium** | **High** | **Low** | **Low** | **Low** | **Low** |
| **Loosely coupled** | **High** | **Medium** | **Low** | **High** | **Low** | **Low** | **Medium** | **Low** |

## IDENTIFICATION OF IMMEDIATE OPPORTUNITIES

The SMB local business market is one of the most sought after markets by commercial companies. The market spends an estimated $800 billion for IT related services.[28] Companies such as IBM, Google and others have been working hard to access this market, with minimal success. SMBs are local. This means SMBs make decisions for purchasing services based on local relationships.

Based on the previous analysis, the SMB market could potentially offer an opportunity for the Postal Service to generate revenue. One advantage that the Postal Service has over the commercial companies is its employees' direct, local, face-to-face access to literally millions of SMBs every day. In this respect, Postal Service workers are a direct "sales force", which may be used to market and deliver email management services at the local level.

In comparison to large and mid-market businesses who have annual budgets allocated for infrastructure development and for infrastructure maintenance, SMBs mostly manage their business on smaller operating budgets to obtain necessary external services for their business. For example, SMBs use external marketing firms or accountants for meeting their needs instead of investing in internal resources and developing infrastructure. A similar logic is applicable to email management given the explosive growth by SMBs seeking customer relationship management (CRM) solutions; as of 2011, there has been a projected growth of 300% for SMBs seeking such CRM solutions of which email management is an important element.[29]

Even though a number of private service providers are available in the market, many SMBs hesitate to utilize such services because of the fear SMBs have in entrusting their email processing to external service providers. SMBs may be willing to trust the Postal Service to perform email management services, just as they have trusted Postal Service with their postal mail handling. This assumption can be validated through direct field research experiments, as is proposed in the next section.

[28] GigaOm Article Quoting Gartner Research, "Reach $800 Billion SMB Market", March 18, 2011, http://gigaom.com/2011/03/18/reach-800-billion-smb-market-at-biztech-small-business/ .

[29] TechJournal Article, "Small, medium-sized business CRM market to triple", September 28, 2011, http://www.techjournal.org/2011/09/small-medium-sized-business-crm-market-to-triple/ .

## PROPOSAL OF RESEARCH PROJECTS

This report is based on many assumptions, so the Postal Service would need to conduct independent research to determine the viability of these assumptions before pursuing any of these options. From the analysis herein, SMBs appear to be an potential market opportunity for the Postal Service to test the viability of the loosely coupled deployment model. Per the guidelines of existing law, the Postal Service has the authority to offer a "market test" for any new service for up to 24 months. Therefore, it is proposed that some such tests or "experiments" be executed to validate the viability of the SMB market to the Postal Service.

Our intention in proposing these experiments is to provide a concrete mechanism for the Postal Service to validate the assumptions and concepts proposed in this report. Below, we propose three research experiments with summarized hypotheses, methods, and expected results that the Postal Service, if it wishes, may execute to support such validation.

One of the main goals of these experiments is to test various hypotheses of email management services offered by Postal Service among SMBs. Three research projects are proposed, based on the following assumptions:

1. A platform is available to conduct the experiment in a secure and controlled manner;
2. Infrastructure required for deploying an email management platform will be easy to deploy, likely cloud-based, to make the experiments possible with limited efforts required on the part of the Postal Service;
3. Postal Service post offices will perform the marketing necessary for acquiring target SMBs for the experiments;
4. Employees at selected Postal Service post offices could be made available to receive training on the use of email management platform; and
5. The experiments will be targeted to SMBs only.

Through the following three research experiments, the Postal Service could obtain an understanding of:

(a) Acquisition costs of small and medium businesses as customers for the service,
(b) The types of business that would most likely adopt the service,
(c) Fees that small and medium businesses would be willing to pay for the service, and
(d) Associated costs to train and deploy Postal Service employees for the service.

**I. Research Experiment #1**

Hypothesis:

SMBs are interested in the trusted brand of Postal Service delivering direct print and electronic marketing messages to their customers.

Method:

(a) Select a local Postal Service post office within the local coverage area of at least 100 SMBs;
(b) Deploy Postal Service branded email management platform;
(c) Train Postal Service postal employees for outbound email marketing using the platform;
(d) Prepare a list of those 100 SMBs;
(e) Design and execute an outreach campaign to market the outbound email marketing service using mail inserts, advertising in the post office and word of mouth at the Postal Service post office counter, for example;
(f) Select five (5) test SMB customers for provisioning the email management platform;
(g) Service the test customers for 90-days;
(h) Conduct survey with test customers;
(i) Document and evaluate the test customer's satisfaction and experience;
(j) Publish findings

**II. Research Experiment #2**

Hypothesis:

SMBs are interested in the trusted brand of Postal Service managing inbound customer service email messages sent by their customers.

Method:

(a) Select a local Postal Service post office within the local coverage area of at least 100 SMBs;
(b) Deploy Postal Service branded email management platform;
(c) Train Postal Service postal employees for inbound email management using the platform;
(d) Prepare a list of those 100 SMBs;
(e) Design and execute an outreach campaign to market the inbound email management service using mail inserts, advertising in the post office and word of mouth at the Postal Service post office counter, for example;

(f) Select five (5) test SMB customers for provisioning the email management platform;
(g) Service the test customers for 90-days;
(h) Conduct survey with test customers;
(i) Document and evaluate the test customer's satisfaction and experience;
(j) Publish findings

**III. Research Experiment #3**

Hypothesis:

SMBs are interested in the trusted brand of the Postal Service providing combined services of managing inbound customer service email messages sent by their customers and outbound email marketing services which may be deployed in conjunction with their direct print mail delivery service.

Method:

(a) Select a local Postal Service post office within the local coverage area of at least 100 SMBs;
(b) Deploy Postal Service-branded email management platform;
(c) Train Postal Service employees for both inbound customer service email management and outbound email marketing using the platform;
(d) Prepare a list of those 100 SMBs;
(e) Design and execute an outreach campaign to market both inbound customer service email management and the outbound email marketing service using mail inserts, advertising in the post office and word of mouth at the Postal Service post office counter, for example;
(f) Select five (5) test SMB customers for provisioning the email management platform;
(g) Service the test customers for 90-days;
(h) Conduct survey with test customers;
(i) Document and evaluate the test customer's satisfaction and experience;
(j) Publish findings

## CONCLUSIONS

Email management may offer a potential source of new revenue for the Postal Service. The Postal Service's opportunity to offer email management service may be an extension of its trusted brand as a communication provider. In this report, we have explored three possible

ways the Postal Service could offer email management as a service, based on the existing market opportunities.

As next steps, we suggest the Postal Service execute the proposed experiments, or something similar, to gather additional data to determine the validity of the assumptions in the above economic model, as well as to qualitatively understand the real nature of the challenges.

# APPENDIX A

**Table 3 - The System of Interlocking Parts of the Interoffice, Inter-organizational Paper Mail System[30]**

| Part Name | Part Description |
|---|---|
| **Inbox** | This was the physical inbox where a secretary received incoming documents. It was usually made of wood, metal or plastic. The courier or "office boy" or "mailroom clerk" would deliver documents – postal mail or internal memos came to the Inbox regularly, such as twice per day. |
| **Outbox** | This was a physical box of metal, wood, or plastic, for memos that were composed and edited, ready for sending to its recipients. The courier or "office boy" or "mailroom clerk" would come and pick up the mail from the Outbox regularly, sometimes twice per day. |
| **Drafts** | A memo sometimes was saved for review prior to sending. A secretary or another person would write the memo and put in a Drafts folder, which a superior would review and provide 'red-line' feedback in the Drafts folder. |
| **Memo** | This was typically a piece of 8½ by 11-inch piece of BOND paper. The top of the Memo had the words '++++++ MEMORANDUM ++++++' written on it. Below that were the following areas: 'To:', 'From:', 'Date:', 'Subject:', 'Body:', 'Cc:', 'Bcc:' (only for view in the sender's original), and an indication with 'Encl.:', if attachment(s) were included. |
| **Attachments** | A Memo could sometimes indicate 'Encl.:', if attachments or enclosures such as another file folder, another document, a drawing or a photograph, or even a parcel, were included. |
| **Folders** | Mail sometimes was organized and filed in separate folders based on some subject matter. |
| **Compose** | A new memo was typically composed on a typewriter. Sometimes whiteout (a white liquid or white paper) was use to erase mistakes. |
| **Forward (or Redistribution)** | A person receiving and reviewing an incoming memo could forward or re-distribute it to others. Forwarding literally involved adding a list of other people to review the memo. Sometimes the forward list was just paper-clipped on the received memo. |
| **Reply** | Sometimes instead of writing a new memo, an employee replied to a |

[30]Ayyadurai, V.A.S., 1978-1982 Papers and Notes of the University of Medicine and Dentistry of New Jersey (UMDNJ)'s interoffice, inter-organizational paper-based mail system, Submitted to Smithsonian Institution on February 16, 2012. This table provides a detailed analysis of the system of interlocked parts of the interoffice, inter-organizational mail system.

| | |
|---|---|
| | memo received in the Inbox. The memo that was being responded to would be attached. |
| **Address Book** | Every office had an address book, which listed each person's first and last names, campus location, group (e.g. surgery, pharmacology), room number and phone number. |
| **Groups** | At UMDNJ, different groups were at different locations, such as Surgery, Pharmacology, ICU, IT. Each location had different people in different groups. |
| **Return Receipt** | This was a formal receipt that a delivery person would make sure got signed by the recipient who had been sent a registered memo. This return receipt would then have to get sent back to the original sender. |
| **Sorting** | Different locations had mail sorting facilities, where the mail would come in, be sorted by groups, departments, locations, zip code, office numbers, so the delivery was easier. |
| **Send** | Memo to an individual meant that the 'To:' field had only the name of one recipient. |
| **Receive** | Memos were received by a secretary in the Inbox. |
| **Scanning Mail** | Visually reviewing the mail was the process of quickly reading the envelope or top portion of a memo, such as the 'From:', 'Subject:', lines to get an idea of which memo to read first, to put for later review, or sometimes to discard altogether. |
| **Forwarding with RETURN RECEIPT Requested (or registered memo)** | This was an important feature of the office. Sometimes, an important letter, say from a Director, would be received by a Manager, and that Manager wanted certain employees in his group to read it and make sure that they did in fact read it. So forwarding with return receipt, enabled the Manager to know exactly who got and who did not get the memo. |
| **Editing** | A memo sometimes would be edited after it was composed. Editing could be iterative based on the feedback received. |
| **Broadcast Memo** | Sometimes a memo would need to be sent to multiple recipients, not just one individual. This meant having multiple names of recipients in the 'To:' field. This was a complicated process, since copies had to be made – carbon copies on a typewriter. A 'check' mark was put next to each copy's intended recipient, so the envelope would be addressed correctly. |
| **Sending Memo to Group** | In a large organization, within and across facilities, as at UMDNJ, there were different faculty departments: Pharmacology, Surgery, etc., and one may want to send a memo to a Group. Again, copies were made, and an Address Book used for a secretary to correctly address each envelope. |

| | |
|---|---|
| **Deleting** | Sometimes a memo would be thrown into a trash folder for disposal. |
| **Purging** | The contents of trash folders, by request, would be collected and permanently destroyed. |
| **Updating Address Book** | Address books were updated as employees came and left UMDNJ. New people were added, and those who had left were removed. Sometimes a circular was sent out which was the update to the existing Address Book, and one would have to manually insert the changes. |
| **Prioritization** | When mail was left in the Inbox, it sometimes was sorted based on some priority, and so marked. |
| **Archiving** | Memos to be kept were often put into an archive file cabinet and organized for long–term record keeping. |
| **Carbon Copies** | A secretary would typically place dark blue carbon paper between two Bond pieces of white paper and roll them into the typewriter, to create copies. The Bond paper on top was the original, the ones below was 'Carbon Copy' or CC. Sometimes, several Carbons were used, and sometimes if the CC list was long, the original would be mimeographed on a mimeograph machine. Then the original To: recipient would get the original, and each person on the CC list would get copies. This got more complicated if there were multiple recipients or a Group in the To: field. |
| **Blind Carbon Copies** | A Bcc list, in the header of the memo, was kept by the Sender only, and others who got Carbon copies did not see the one with the Bcc list. So only the sender knew who was on the Bcc list. |
| **Registered Memo** | In the hospital environment, this was a very important feature, because certain memos had to be acknowledged as received. A Memo could be flagged as a 'Registered Memo,' this would mean that it was treated differently for instance, the delivery person could put it in a different color envelope and ensured that recipient signed for it. |
| **Undeliverable Notification** | Sometimes a memo could not be delivered even after many Retries. In this case the delivery person would take the memo back to the sender with a note on it saying 'undeliverable'. |
| **Retries** | All mail had to be delivered, or a real effort made to keep trying before being deemed undeliverable. This meant policy of 'retries' as many as 3 to 5 times, before the attempts stopped. The number of retries was a policy decision. |
| **Securing Delivery** | All mail had to be securely delivered. This meant that only the designated recipient had to get it. Typically this was ensured, as the delivery person knew who was who and knew the secretaries. Moreover, |

| | |
|---|---|
| | most memos were put in an individual sealed envelope, with a string closure or taped. |
| **Transporting** | All mail needed to be transported. At UMDNJ, there were many ways of transport. The delivery person could physically pick up and deliver from local office to office. Another form of transport was pneumatic tubes forming a system on train-track-like rails. Mail among different buildings and campuses were transported by cars or trucks. |

# APPENDIX B

**Table 4 – Email: The Full-Scale Electronic Interoffice, Inter-organizational Mail System[31]**

| Interoffice Mail System Parts and Related Email Parts |
|---|
| **Inbox** |
| **Outbox** |
| **Drafts** |
| **Memo** |
| To: |
| From: |
| Subject: (70 chars width) |
| Date: |
| Body: |
| Cc: |
| Bcc: |
| **Attachments** |
| **Folders** |
| **Compose** |
| **Forward (or Redistribution)** |
| **Reply** |
| **Address Book** |
| **Groups** |
| **Return Receipt** |
| **Sorting** |
| **Send** |
| **Receive** |
| **Scanning Mail** |
| **Forwarding with RETURN RECEIPT (or registered memo)** |
| **Editing** |
| **Broadcast Memo** |
| **Sending Memo to Group** |
| **Deleting** |
| **Purging** |
| **Updating Address Book** |

[31] Ayyadurai, V.A.S., FORTRAN IV Code Samples developed in 1978, Submitted to US Copyright Office for "EMAIL", "Computer Program for Electronic Mail System", 1982 ; submitted to Smithsonian Institution, February 16, 2012. This table is derived from the core parts developed in the implementation of EMAIL, the first full-scale electronic emulation of the interoffice, inter-organizational paper-based mail system.

| **Searching Address Group** |
|---|
| By Group |
| By User Name (short name) |
| By Last Name |
| By Zipnode (node or location) |
| **Prioritization** |
| **Archiving** |
| **Carbon Copies** |
| **Blind Carbon Copies** |
| **Registered Memo** |
| **Undeliverable Notification** |
| **Retries** |
| **Secure Delivery (Using username and password)** |
| **Attachments** |
| Attaching to a memo |
| Creating attachments from scratch |
| Saving attachments |
| Attachment editor |
| **Transmission of memo** |
| **Multi-Level User Access** - User, Manager, Postmaster, System Administrator |
| **Memo Formatting** - Functions were included to make sure that a memo on the screen when printed looked somewhat like a typewritten memo. |
| **Printing** |
| Print all mail |
| Print selected memos |
| Print only the "envelopes", To, From, Subject, Date |
| Formatted printing --- memo looked like typewritten one |
| **Exporting of Mail** |
| Export a single memo to a file |
| Export a set of memos to a file |
| **Group Management --- Postmaster/Administrator Level** |
| Creating Groups |
| Deleting Groups |
| Placing User in a Group |
| Deleting User from a Group |

| |
|---|
| Displaying Groups |
| Restricting Group Access --- which users could not send to certain groups. E.g. Only the Postmaster could send to 'ALL' |
| **Postmaster & Systems Administrator Functions** |
| Reports on mail usage by user |
| Deleting aged mail |
| Shutdown of the entire system |
| Startup of the entire system |
| Deleting Users |
| Adding Users |
| Adding a 'Zipnode', new network |
| Deleting a Zipnode |
| Disabling a User from logging in to the user interface |
| Direct starting of mail transmission |
| **Integrated System Components** |
| Easy-To-Use User Interface |
| Word-processor |
| Integrated Attachment Editor |
| Relational Database Engine |
| Modular Inter-Process Communication Protocol |
| Print Manager for Formatted Printing |
| Systems Administrator Console |
| Post Master Console |