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JOINT APPLIED PROJECT

Are You Managing Your Email – Or is Email Managing You?

An Analysis of Email Among Personnel Within Army Project Management Offices

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Based on a class project that developed leadership communication competencies for seven levels of Army civilians, email was found to be the most prevalent means of communication, regardless of leadership level. Additionally, there was a widespread perception that email communication needs to be improved. This thesis seeks to explore the clarity, efficiency and effectiveness of email among personnel within Army project management offices. This study included four phases: 1) a review of the relevant literature, 2) a log of email received by five project officer's in the US Army Project Management Office, 3) a questionnaire to gather data about email usage in the Project Management Office, and 4) a thematic analysis of a sample of problematic emails. The findings suggest that an overwhelming volume of email, perception that email responses must be expeditious, and the prevalence of enabling technology, contribute most significantly to email overload. Recommendations include the proposal to initiate corporate email policy and training, thus standardizing best practices and regulating email usage.

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AN ANALYSIS OF EMAIL AMONG PERSONNEL WITHIN ARMY PROJECT MANAGEMENT OFFICES

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ABSTRACT

This thesis explored the clarity, efficiency and effectiveness of email among personnel within Army project management offices. This study included four phases: 1) a review of the relevant literature, 2) a log of email received by five project officers in the US Army Project Management Office, 3) a questionnaire to gather data about email usage in the Project Management Office, and 4) a thematic analysis of a sample of problematic emails. The findings suggest that an overwhelming volume of email, perception that email responses must be expeditious, and the prevalence of enabling technology, contribute most significantly to email overload. Recommendations include the proposal to initiate corporate email policy and training, thus standardizing best practices and regulating email usage.

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LIST OF ACRONYMS AND ABBREVIATIONS

AHRS	Defense Messaging System
AKO	Army Knowledge Online
ALIS	Automated Logistics and Integrated
APM	Assistant Program Manager
ARPANET	Advanced Research Projects Agency Network
ASAALT	Assistant Secretary of the Army for Acquisition., Logistics, and Technology
ASCP	Army Small Computer Program
AUTODIN	Automatic Digital Network
CC	Carbon Copy
CIO/G6	Chief Information Officer of the Army (Signal)
CTSS	Compatible Time-Sharing System
DCASS	Defense Communications and Army Switched Systems
DCATS	Defense Communications and Army Transmissions Systems
DoD	Department of Defense
IBM	International Business Machines
IT	Information Technology
IPT	Integrated Project Team
ITV/AIT	In-Transit Visibility/Automated Identification Technology
MC4	Medical Communications for Combat Casualty Care
MIT	Massachusetts Institute of Technology
MTS	Movement Tracking System
NIPRNET	Non-Secure Internet Protocol Router Network
NSC	National Security Council
OPR	Office of Primary Responsibility
PEO	Program Executive Office
PEO EIS	Program Executive Office, Enterprise Information Systems
PM	Program Manager
PMO	Project Management Office/Officer
PROFs	Professional Office Systems
RCAS	Reserve Component Automation System
SDC	System Development Corporation
SIPRNET	Secret Internet Protocol Router Network
SPS	Standard Procurement System
TC-AIMS II	Transportation Coordinator-Automated Information for Movement Systems II
VPN	Virtual Private Network
VTC	Video Teleconference

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EXECUTIVE SUMMARY

Email has become both the primary and preferred method of communication within industry and the government. It allows personnel within the Army to overcome geographical challenges and communicate from various locations both within and outside the United States. The findings of the communication competency study showed that personnel at all levels in the Army faced similar issues with the clarity and efficiency of email. Additionally, it is perceived by those interviewed in this study, that it is the most misused and least effective media. To make email more effective, one needs to better understand how and why email is currently perceived as inefficient and unclear. To do so, this research explores how email is devised, written, and used in one target community within the US Army. The research entailed studying available literature on the topic of email, interviewing leading Information Technology (IT) providers, studying the authors' own email habits, and developing and analyzing other's perceived email usage. Findings suggest that an overwhelming volume of email, perception that email responses must be expeditious, and the prevalence of enabling technology, contribute most significantly to email overload. Recommendations include the proposal to initiate corporate email policy and training, thus standardizing best practices and regulating email usage. The results of this study will be shared with the Program Executive Officers (PEOs) in the hopes that they can use the results of these findings to the organization's benefit.

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I. INTRODUCTION

A. PURPOSE

The purpose of this research was to explore how email is devised, written, and used among personnel within U.S. Army Project Management Offices (PMOs). This research entailed studying available literature on the topic of email, interviewing leading Information Technology (IT) providers, studying the authors' own email habits, and developing and analyzing other's perceived email usage. The results of the study will be shared with the Program Executive Officers (PEOs) in the hopes that they can use the results of these findings to the organization's benefit.

B. HISTORY OF EMAIL

It is believed that email may have started as early as 1965 as a way for multiple users in a single computing environment to communicate. Among the first systems to have this communication capability were the System Development Corporation (SDC) Q32 and the Massachusetts Institute of Technology (MIT) Compatible Time-Sharing System (CTSS). Email was quickly extended to become network email, allowing users to pass messages between different computers. It was used mainly in educational institutions, but the government quickly adopted this technology.

The early history of email in the federal government is a little murky; the Automatic Digital Network (AUTODIN) system may have been the first to allow electronic text messages to be transferred between users on different computers in 1966. The Advanced Research Projects Agency Network (ARPANET) of the US Department of Defense (DoD) made a large contribution to this evolution of email. ARPANET began using email transfer in 1969, and thus significantly increased the popularity of email.

In 1969, the US Air Force began sending text messages by keypunch cards. By 1979, US Air Force users were logging onto central computers and leaving messages for

government contractors and other US Air Force users. By 1984, the US Air Force was using personal computers for sending email.

In 1982, the White House adopted a prototype email system from International Business Machines (IBM) called the Professional Office System (PROFs), which was used by the National Security Council (NSC) staff. By April 1985, the system was fully operational within NSC with home terminals for principals on the staff, and by November of the following year, the rest of the White House came online. They started first with the PROFs System, and eventually migrated through a variety of systems such as Lotus' ccmail. During this same timeframe, technology migrated from dumb terminals to the personal computers similar to what is known today ("Origins of Email," undated).

Email has become both the primary and preferred method of communication within industry and the government. It allows personnel to overcome geographical challenges and communicate from various locations both within and outside the United States. The use of email continues to grow significantly. In 2004, the number of email users grew by 15 percent to reach 651 million globally. The market research firm, The Radicati Group, reported in their January 2005 study, *Messaging Software Market 2004 – 2008*, that the average user sends 34 emails every day and receives 99 emails every day. In the Congressional Online Project report *Email Overload in Congress*, studies found that congressional staff preferred receiving and sending email to any other form of communication (mail, phone, facsimile) since technology was helping to automate the work previously done via writing or calling. The continued advancements in technology, such as Blackberry communication devices and cellular phones with email capability, will continue to increase the amount of email which is sent and received daily.

C. BACKGROUND OF THE STUDY

During the authors' 4th quarter at NPS, in the *Communication Strategies for Effective Leadership* class, the Fort Monmouth team was tasked to research and deliver a paper on "Communication Competencies." The purpose of this task was to conduct a preliminary study that used the framework of the leadership pipeline concept, as defined

in *The Leadership Pipeline, How to Build the Leadership Powered Company* (Charan, Drotter & Noel, 2001). The *Leadership Pipeline* discussed the key areas of skill requirements, time applications, and work values that are required, developed, or enhanced at each of seven levels of the leadership pipeline. This concept was used to develop leadership communication competencies for each of the various levels in the Army civilian world.

The most interesting, and somewhat significant, finding was that, regardless of level, email is the most prevalent means of communication used. Additionally, it was perceived by those interviewed that it is also the most misused and least effective media. The findings of the communication competency study showed that personnel at all levels in the Army faced similar issues with the clarity and efficiency of email.

There appears to be a widespread need to explore email communication, clarity and efficiency in the Army. In an effort to make email more effective, there is a need to better understand how and why email is currently perceived as inefficient and unclear. As a group, it was determined that this area needed further research and was a perfect candidate for this Joint Applied Project. Therefore, this research explores how email is devised, written, and used in one target community within the US Army.

The organization selected for this joint applied project was the Program Executive Office, Enterprise Information Systems (PEO EIS). The PEO EIS mission "is to provide joint service and Army war fighters with information dominance by developing, acquiring, integrating, deploying, and sustaining network-centric knowledge-based information technology and business management systems, communications and infrastructure solutions through leveraged commercial and enterprise capabilities that support the total Army, everyday, and anywhere!"

The PEO EIS has a dual reporting chain which includes the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) and the Chief Information Officer of the Army (CIO/G6). The PEO has over 40 Program Managers (PMs) and Assistant Program Managers (APMs) who support programs that are dispersed worldwide to include Germany and Southeast Asia. The PEO has developed programs

that directly support the war on terrorism. A sampling of the programs that the PEO is responsible for include:

- Defense Communications and Army Transmissions Systems (DCATS)
- In-Transit Visibility/Automated Identification Technology (ITV/AIT) Transportation Coordinator-Automated Information for Movement Systems II (TC-AIMS II)
- Medical Communications for Combat Casualty Care (MC4)
- Movement Tracking System (MTS)
- Automated Logistics and Integrated (ALIS)
- Defense Messaging System (AHRS)
- Standard Procurement System (SPS)
- Reserve Component Automation System (RCAS)
- Defense Communications and Army Switched Systems (DCASS)
- Army Small Computer Program (ASCP)

The programs listed above support logistics, medical, personnel, training, acquisition, transportation operations, and information technology capabilities. The PEO personnel include a large number of acquisition certified personnel and are comprised of military, civilian and support contractors

D. SCOPE OF THIS JOINT APPLIED PROJECT

This Joint Applied Project explores how email is devised, written, and used in one target community within the US Army. PEO EIS and leading Information Technology (IT) providers were the focus of this study. The PEO environment is representative of a large, diverse, cross-functional, geographically dispersed Army organization. Leading IT providers were included in this study to determine if non-government institutions are experiencing similar issues as Army Project Management Offices.

E. RESEARCH QUESTIONS

Based on the results of the research paper in the *Communication Strategies for Effective Leadership* class and a review of the literature, several research questions were developed to guide the project.

- How much of the workday is spent on email? What is the volume of email received? Does email contribute to a feeling of being overwhelmed? What factors contribute to feeling overwhelmed by email?
- What are the purposes of emails that are typically exchanged within Army project management offices?
- How effective is email within Army project management offices as measured by the following:
    - How well do receivers of email perceive the purpose of the email?
    - How long do receivers perceive that it takes them to comprehend the purpose or requested action?
    - How long do receivers perceive that it takes them (and/or others) to complete an action tasked via an email message?
- What does communication theory and research offer for improving the perceived clarity, effectiveness and efficiency of email while reducing the feeling of being overwhelmed?
- Based on the above findings, what recommendations can this project offer for improving email communication within Army Project Management Offices?

F. METHODOLOGY

The study included four phases: 1) a review of the relevant literature, 2) a log of email received by five project officer's in the US Army Project Management Office, 3) a questionnaire to gather data about email usage in the Project Management Office, and 4) a thematic analysis of a sample of problematic emails. A detailed description of the methods is presented in Chapter III.

G. ORGANIZATION OF STUDY

Chapter I of this Joint Applied Project introduces the research topic. Chapter II presents a literature review of email to examine pertinent research related to email effectiveness and clarity. Chapter III details the research methodology and data sources used for this study. Chapter IV is the analysis of the data collected. Chapter V summarizes the findings of this research and provides a conclusion, recommendations, and suggestions for further study.

H. ANTICIPATED BENEFITS OF STUDY

This project will provide valuable insight into the use and misuse of email within Army Project Management offices. If the project proves successful, the findings may be appropriate for wider dissemination within the Army and DoD. The research will present suggestions for further study, as well as recommendations for improvement so that PEO EIS, as well as the Army, may use email to communicate more effectively and efficiently.

II. LITERATURE REVIEW

A. INTRODUCTION

Email is widely used in our professional, academic, and personal lives, and both the benefits and issues related to its usage extend far past what our initial Army-centric project revealed. Email has become the primary means of communication in the world today, and it has enabled us to converse and exchange information independent of time and space. The physical and monetary efficiency of this relatively recent form of communication, however, has resulted in a worldwide information overload. Users now often find themselves lost in a sea of emails, negatively affecting productivity. Email is an inherently proficient and economical medium for communication, but this overload is experienced in both professional and personal lives, and has had a negative impact to that intrinsic efficiency.

A review of current literature was conducted to provide background on other research conducted in the area of email usage. This project examined pertinent research documents, published policies, and guides, both online and in hardcopy, relevant to email effectiveness, clarity, use, and abuse.

In addition, leading IT providers were interviewed to determine if non-government institutions are experiencing the same issues as Army Project Management Offices. Interview questions focused on the existence of standard operating procedures and policy guidance on effective use of email as a primary means of communication.

B. LITERATURE RELATED TO EMAIL

1. Email as an Enabler

Email is a communications tool intended to facilitate both business and personal communications. Most email users would agree that there are both advantages and disadvantages to email. When used properly, as any tool, email can indeed improve productivity. It has a significant advantage to other mediums of communication in that it does not require the participants to be geographically or temporally co-located. This is

unlike other popular methods of communications such as meetings, phone calls, and video teleconferencing. Email does not have to be scheduled, nor does it require the communicators to be available at the same time or in the same place. In addition, email is an expeditious means of communicating to an almost unlimited number of people, which is in contrast to traditional mail (Sarbaugh-Thompson & Feldman, 1998; Berghel, 1997). Girrier (2003) stated that "Email has revolutionized communications by accelerating interpersonal communications and enhancing collaborative planning." There is little doubt that email has enabled us to confer more readily with our colleagues and with more frequency.

There are many other undeniable advantages to email over other methods of day-to-day communications. For instance, email is virtually without cost to use. Conversely, phone conversations and video-teleconferencing require funding. Face-to-face meetings can also be costly when considering travel expenses and travel time for those participants who are not co-located. Email also provides a simple, almost automatic, and paperless means of achieving and retrieving information (Berghel, 1997). In addition, email provides for near limitless reviewability (Friedman & Currall, 2003).

2. Email as a Disabler

There is an ever-increasing demand for information, real-time collaboration, and an ever-present expectation for immediate inquiry response. It is no wonder that email has become the tool of choice in both the business and academic worlds (Berghel, 1997). Research indicates that email is now favored over telephonic conversations and both face-to-face and video enabled meetings (Dawley & Anthony, 2003). It is certainly easier and less time consuming to shoot off an email to a multitude of recipients that it is to set up a meeting or conference call. This change in the way business is done may seem more efficient; however this research has identified numerous drawbacks to this trend.

A study was conducted from 1986 to 1989 by Sarbaugh-Thompson and Feldman (1998) to examine trends in the various methods of communication, such as email and face-to-face communications. Three questionnaires were administered to a test group of

17 over this four-year period and the overall results indicated that as email usage within the test group increased, the overall communications within the group decreased. Furthermore, such a decrease in communications tended to retard social bonding and the development of trusting relationships (Sarbaugh-Thompson & Feldman, 1998). In a way, the increasing use or reliance on email may actually increase the amount of time to complete tasks since individuals within a virtual team may tend to be less trusting of the intentions or capabilities of other teammates. This in turn can lead to increased inquiries, double-checking, and redundant activities.

Another drawback to email communications is directly related to one of its most significant advantages. The fact that email can be sent regardless of temporal and geographical differences between recipients can have a definite negative effect on communications. Unlike face-to-face or even telephonic communications, email does not facilitate a common ground between participants (Friedman & Currall, 2003). Email can be taken out of sequence or context. Very often a single email will spawn numerous independent threads which may lead to various interpretations of issues and potential solutions. Email is only a real-time medium if participants read and respond in a timely manner and are privy to all threads. The quantity of threads itself can be detrimental to the effort, and definition of "timely" can vary from task to task.

Email can be a valuable and often essential tool in our daily lives, but those same features that make it so versatile and economical can also create inefficiencies and cause problems. During this research, the authors came across an article from *Human Relations* entitled "Conflict Escalation: Dispute exacerbating elements of email communication." This article presented a theoretical model, the dispute-exacerbating model of email (DEME), inferring that the very nature of email increases the likelihood of conflict through misinterpretation and/or the lack real-time collaboration. Its ability to facilitate communications independent of time, for instance, can prompt individual recipients to form positions out of context and sequence, resulting in conflicts amongst the recipients and increasing divergence of focus or intent. Furthermore, conclusions were made to indicate a significant decrease in the ability to resolve such conflicts through the same electronic media. (Friedman & Currall, 2003)

It is easy to see how email can be misinterpreted or interpreted differently by several recipients. Email does not provide the range of communications that other methods do. For instance, email does not adequately afford its addressees with the ability to gauge the emotions of the sender. It lacks the capacity to mimic social signals such as facial expressions, vocal intonations, and the general body language used in other forms of communications. It is also very difficult for the author of an email to convey sarcasm or humor, and this too can lead to misinterpretation. Even organizational status can be lost within a string of email communications thus potentially creating adverse outcomes. (Sarbaugh-Thompson & Feldman, 1998).

3. Email Abuse

Still, email offers the user a cost effective convenience that is hard to resist. It is so hard to resist that it often leads to abuse. Spam (unsolicited, unwanted electronic junk mail) is a well-known abuse of email, but one can usually filter it out either automatically or even by performing a quick manual scan. Another familiar form of abuse is the exchange of personal and sometimes inappropriate emails during working hours and at the work place. However, there is another type of perhaps less deliberate abuse that, in many cases, occurs with all the best intentions. This is the user's decision to add recipients without really considering their need to receive the message. Contrary to face-to-face meetings, video teleconferences (VTCs), or even conference calls, email addressees can be virtually limitless. It takes little more than a few keystrokes to add recipients and it seems that more users than not will carbon copy people without a true regard to their needs. Users and organizations create extensive email lists that can even further exacerbate the abuse. Similarly, the "Reply to All" feature can add to the abuse. Couple these with numerous and repetitive email strings and the volume of email is overwhelming (Berghel, 1997; Girrier, 2003).

All this email abuse can directly lead to decreased productivity. Unlike obvious spam which can usually be easily identified and deleted, these volumes of email from familiar sources have to be examined for significant content. For those who are truly overwhelmed, however, some email will get inadvertently lost or ignored. It is clear to

see potential issues that could surface if the wrong emails are delivered but never read (Dawley & Anthony, 2003).

4. Email and Information Overload

General Hal M. Hornburg, US Air Force, wrote, "Information overload is a common occurrence for today's warrior" (Hornburg, 2003). Overwhelming volumes of email can quickly lead to information overload and ultimately impair job performance (Stack, 2004). Employees can feel bogged down by email and may often find themselves lost and unsure of where to begin, what emails to concentrate on, and what emails to leave for later. If the volume is too large, users may find themselves initially scanning messages, looking for those that require immediate attention, only to later spend excessive amounts of time searching for something they may have not opened but left for later, not recalling if it was filed, dispatched, or simply forgotten. A recent *Wall Street Journal* report pointed out that employees will soon be spending from 3 to 4 hours of their day working on email (Stack, 2004). In addition, an article from *VNU Computing* stated that most email users spend about 2 to 4 hours a month performing housekeeping on their email ("Networking", 2005). It quickly becomes clear how email can become a personal and organizational resource drain (Berghel, 1997). What was considered an effective communications tool with a great potential of enhancing productivity in an efficient manner can also be looked at as an ineffective tool that decreases productivity and subsequently increases costs.

Research indicates that the prominence of email has actually lengthened the work day (Cavanagh, 2003). For instance, Blackberrys allow users to stay connected to email day and night. For some, email has become addictive ("Networking", 2005). It is not uncommon to see people checking their email at little league games, on the beach, in restaurants, and even while driving to work. Hewlett-Packard, in association with Dr. Glenn Wilson from the University of London, refers to this as an abuse of "always-on" technology that has resulted in a state of "Info-Mania" (Wilson, 2005). Email has given a new meaning to the phrase "taking your work home" when one considers how common it is for the average business person to be reading email at night in front of the television or

over the weekend to make sure they have a jump on Monday mornings, and while on vacation to ensure that they don't fall too far behind or miss something important.

This reliance and concern over email has the potential of decreasing our quality of life. Not only has it taken over our careers and intensified our daily workload, it has begun to creep into our personal lives and steal time from our family and friends. There is even a question as to whether it affects users' health. As cited in the book, *Managing in the Email Office*, "Email is now one of the top ten causes of work-related stress" (Seeley & Hargreaves, 2003).

5. Email as a Threat

The research conducted as part of this Joint Applied Project has also uncovered some of the more common email concerns regarding security and privacy. Email is a significant source of computer viruses which cannot only damage individual computers, but can propagate throughout a company's network causing millions of dollars of damage in the form of lost data, time, and productivity (Berghel, 1997). In addition, email facilitates both accidental and purposeful, flow of sensitive information. It makes it easy for users to pass data to one another and thereby creates opportunity for industrial and international espionage. Email is easily monitored, which not only increases the probability of information leakage, but also the potential of incursions into our privacy (Berghel, 1997; Girrier, 2003).

Email also has permanency attributes. A message can be proliferated throughout servers all over the world and can be difficult if not impossible to truly eradicate (Cavanagh, 2003). Although not a main focus of this project, email security and privacy matters are still significant and a reality that has driven companies and government agencies to spend considerable time, money, and personnel resources to combat. It has added to our level of stress and our work load and in some part to our information overload in that it requires workforce training, monitoring, and staffing.

C. EMAIL POLICIES

1. US Army

After analyzing the issues and benefits of email, research was conducted on the existence of email policy and whether there were any published corporate or governmental policies that directed proper and efficient email procedures. The research started with the Army. There is indeed an email policy set forth by the Army's central email service, the Army Knowledge Online (AKO). The AKO is effectively the email hub for the Army with approximately 2.5 million messages passing through daily. It is standard for every Army employee to have an AKO account and to use this account for their email, and although most agencies do sustain their own email servers, the AKO address and server is used and then automatically forwarded to these local servers and addresses (United States Army, 2005).

The AKO policy concerns itself primarily with email management, acceptable and prohibited usage, access regulation, and virus and spam protection. Specific elements of this policy include a prohibition on auto-forwarding to non-official accounts, automated stripping of .zip and .exe attachments, a set allotment of mail storage space (50MB), maximum recipient list of 50 addresses, and a limit to attachment size (5MB and five recipients). What are conspicuously missing from the AKO policy are rules directly related to best practices. The only rule that even comes close to limiting the "information overload" faced by Army employees is the limit to the recipient list and attachment size, both of which are still quite large (United States Army, 2005).

2. US Air Force

During the research, a US Air Force document entitled the *Air Combat Command Commander's Guide to Managing E-mail* was discovered. This "guide" provided a mix of actual policy and general email best practices, similar to what was found in other commercial sources that are presented in later sections. In this document, General Hornburg presents his Commander's "Top Ten" List on E-mail:

- E-mail can come back to haunt us; establish/enforce rules to eliminate inappropriate/potentially damaging material.
- Sending recurring e-mail traffic and updates to our subordinates is not a replacement for commander's calls.
- Assign a designated individual or individuals to monitor the organizational e-mail account inbox regularly to ensure messages requiring action are acted upon promptly.
- Subject lines should include keywords and describe the content of the message. (This helps recipients prioritize, file, and search for messages.)
- Official e-mail will include "//SIGNED--initials//" in upper case before the signature block to signify it is official. They will not contain slogans, quotes, logos, graphics, digital images, clip art, etc., unless required as part of the e-mail content.
- Before posting to public web pages ensure For Official Use Only files are cleared by the Office of Primary Responsibility (OPR) and/or Public Affairs or Judge Advocate.
- Communicate through/to organizational e-mail boxes to ensure issues are acted on when personnel are away.
- Only reply to e-mail that absolutely requires a response and minimize the use of the "Reply to All" function.
- E-mail is considered an official government record and is legally searchable on your computer and subject to record retention policies.
- Use caution when sending e-mail messages to mass distribution lists; establish approval coordination/release processes for central unit release (i.e., executive officers).

In addition, the "guide" provided clear direction to maintain the supervisory chain of command when sending emails. It also prohibited the propagation of chain letters, sending abusive and/or offensive materials, and the use of email for personal or financial gain (Hornburg, 2003).

Another document, the US Air Force Instruction for *Air Force Messaging*, defines additional policy for authorized official and limited personal use of email, Freedom of Information Act compliance, specific format for electronic signature blocks on official emails, and specific naming conventions for Non-Secure Internet Protocol Router Network (NIPRNET, unclassified) and Secret Internet Protocol Router Network

(SIPRNET, classified) email addresses. It also cites that all email is subject to monitoring and prohibits the forwarding of email to commercial accounts (USAF, 2005).

3. Hewlett-Packard

One of the leading IT providers, Hewlett-Packard (HP), published a company document that detailed their email policies, specifically regarding marketing. This 70 page document went into great detail providing both guidance and corporate practices in using email as an effective marketing tool. HP states that email is their most commonly used medium for direct marketing, and as a result have authored a set of standards for their employees to follow and provide training to optimize its effectiveness as a business tool. Email, in this case, must be drafted with the intention of fostering business relationships and increasing sales. The clear designation of "HP" or "Hewlett-Packard" in the "from" line, and a general policy of drafting clear, concise, and compelling subject lines are specifically mentioned in the document, and a consumer study by DoubleClick was cited to validate their importance ("HP online," undated).

DoubleClick has conducted a series of consumer email studies that examine trends, effectiveness, and consumer responsiveness. In their 2002 study, they found that the content of the "from" line was the most significant factor in whether or not a consumer would open an email. Sixty percent of those surveyed stated that their motivation to open an email was most appreciably related to where the message came from. Another 35 percent indicated that the subject line was the most important motivating factor ("DoubleClick," 2002).

HP's email policies also specifically address consumer privacy. Emails may provide a means to gather personal information, but this must be done with the knowledge and explicit positive permission of the recipient. All details of how such acquired information will be used must be provided before attaining positive permission. In addition, HP requires that all such emails sent to consumers have clear "opt-out" option that provides the recipient with the ability to discontinue future mailings ("HP online," undated). In fact, HP was awarded the "Most Trusted Company for Privacy" in

2005 by TRUSTe® and the Ponemon Institute citing a privacy program that warrants consumer trust (Sinrod, 2005).

HP has developed another guide entitled the *HP Guide to Avoiding Info-Mania*. This document addresses information overload and provides several tips to help its employees, as well as other businesses, deal with this "Info-Mania" (Wilson, 2005). We've discussed the advantages and disadvantages of email usage and the trends of the workforce moving toward email as a preferred means of communication. Next, an examination of some suggested best practices, tools, and proposed policies for email usage will be presented.

D. BEST PRACTICES

1. When to Use Email

The results of our literature review provided suggestions as to *when* to use email. Users must examine when to use email versus when to use personal means of communication. A manager, for instance, should not lead from his or her desk (Girrier, 2003). The only exceptions would be when the team is not co-located and then serious consideration should be taken to bring the team together on a regular basis through face-to-face meetings and video teleconferencing. Even HP prompts its employees in its online direct marketing standards to ask the question: *Is email the most efficient tool to meet the objective*? prior to conducting business via email ("HP online," undated).

Other research indicates that email should not be used as an excuse not to communicate (Stack, 2004). Face-to-face conversations, as well as meetings, should be conducted whenever possible to foster relationships and improve quality of communications by avoiding the confusion that can result from delays in email responses, misinterpretations, and the "fire-and-forget" culture that has evolved from the convenience of email usage. Consideration should also be given to setting rules during meetings that ensure attendees are contributing rather than checking their email (Wilson, 2005).

Wilson (2005) indicates that one should consider going "offline" occasionally to avoid the distractions of instant messaging or pop-up emails. This will better enable the individual to concentrate on an important task and/or meeting a deadline. The 2003 release of Microsoft® Office Outlook® introduced a feature that provides a real-time pop-up window notifying the user of incoming email messages. This pop-up provides instant information regarding the sender, subject, and first line of the email.

2. How to Use Email

Our literature review results provided suggestions on *how* to use email. For example, when using email, messages should be brief and to the point and even limited a single page when possible (Stack, 2004). Email can be an effective tool for providing updates and responses, but not necessarily appropriate for telling a story and conveying complex issues (Girrier, 2003). The essential focus of the message should be up front in the email and not require the recipient to scroll through pages of text (Wilson, 2005) to gain an understanding of the communication and perhaps risk misinterpretation or dismissal. A senior manager within Program Executive Office for Command, Control and Communication Tactical (PEO C3T) once stated that if he had to scroll through an email to read it, he would immediately delete it. This was probably not the case with respect to email from his superiors, but was likely the case for all other email traffic. Considering this, it is a good idea to structure an email, particularly if it is unavoidably lengthy, so that it facilitates skimming and passage up the management chain. An approach using a Bottom Line Up Front (BLUF) with subsequent concise paragraphs should be used to ensure that your audience, and particularly your superiors, read and understand your message (Girrier, 2003).

Stack (2004) indicates that an email should stand alone as well. The reader should not have to scroll through a string of emails to understand the message you are trying to get across. It is a good practice to include the salient portions of an original email into the prose you are composing in order to deliver a complete story. This will help to avoid misinterpretation and assist in focusing the reader's attention on the elements you choose.

One way to ensure that your email is read in a timely manner is to utilize the subject line efficiently. The subject line will typically be read by the recipient regardless of whether the email is ever opened, and it is essential that this text convey the real meaning of your message otherwise your email may be overlooked or even deleted. It is also essential to understand that many users may use key words in the subject line to search through emails. Therefore it is a good practice to title your email appropriately to convey the true meaning of the email content and summarize the message you are trying to get across. You will want to make the subject short and to the point since there is only limited space that can be displayed, particularly on devices such as Blackberries. When replying, you should consider revising the subject line if you are indeed changing the context of the original email (Girrier, 2003; Mackiewicz, 2003; Stack, 2004). Note, however, that some users may choose to sort their email by subject in order to group email threads, and your email may get overlooked by altering the subject line. Subject lines can also be used to express significance or precedence, and facilitate delegation of tasks to subordinates. Terms such as "Read Immediately" and "Complete by Close of Business" can aid in getting the message across and allow readers to prioritize the messages in their in-boxes (Wilson, 2005). Finally, similar to text messaging, one may want to consider using the subject line as your entire message if possible. This is an efficient and expedient method of email communications.

Email composition techniques can ensure effective communications. The use of emoticons should typically be reserved for personal or informal email communication; however their use does help alleviate the issues identified earlier concerning the impersonality presented by email usage and the relative inability of the reader to gauge the author's emotions (Mackiewicz, 2003). Emoticons also aid in the interpretation of sarcasm and humor, but these elements should also be avoided in profession email communications (Stack, 2004). Composition of emails in either all capital or all lower case letters should also be avoided. The former can easily be misinterpreted as shouting while the latter can appear to be unprofessional or simply lazy. In addition, the use of online "lingo" such as LOL, for laughing out loud, should be reserved for personal communication (Mackiewicz, 2003). You need to know and understand who your

recipients are, including those you carbon copy, prior to adopting any informal email techniques and shortcuts.

Users must remain aware of the volumes of email traffic that exist in our lives and strive to avoid contributing to it unnecessarily. Use good judgment when addressing emails in both the "To" line and the "CC" line (Stack, 2004). Try to avoid unnecessarily including people that do not need to read the email, and avoid using address lists and the "Reply to All" feature unless you are certain that all addresses need to receive your message. Additional caution should be used when forwarding emails. You must be aware of the content in the strings you are forwarding and be certain that you want your recipients to have access to it. Another practice that leads to information overload is the simple forwarding of emails with the "for your information" or FYI message (Cavanagh, 2003). There is really no motivation for the recipient to read such a message and no direction or request for action.

The literature review turned up some other recommended email best practices regarding the use of signature files, greetings and farewells. Signature files, when set up properly, appear at the end of every message and provide the read with pertinent information about the sender such as job title and phone number. If used properly, this can promote a better understanding of the context of the email by providing the missing organization status that was discussed earlier as well as providing more personal contact information, thus encouraging individual feedback. As with the email itself, it is recommended that the signature file be kept to a minimum size (Girrier, 2003; Mackiewicz, 2003). Some users tend to add historical or literary quotes to their signature files. Although not specifically addressed in the literature reviewed, some felt that this was an abuse of the signature file and in many cases came across as pretentious.

With respect to greetings and farewells, such as "Dear John" or "Respectively Yours, Enrico," opinions seem vary. Most sources consider them harmless, but a few recommend against them citing their contribution to information overload and burdening the reader (Mackiewicz, 2003). It was found that the best recommendation in this case was to consider your reader. Often adding a personal touch will help to foster a good working relationship that may suffer otherwise in an impersonal word of email

communications. The *HP Guide to Avoiding Info-Mania* specifically recommends avoiding the one-word emails such as 'thanks' (Wilson, 2005). These can certainly add to the amount of non-essential messages in one's in-box, however, some people may expect such an email and be insulted not to receive it. It is common, after all, to thank people in the course of normal conversations, meetings, and phone calls.

Microsoft® Office Outlook® is one of the most popular email programs in use and it is the most frequently used software product in the Army. Through the research, it was found that a few sources that referred directly to Outlook® and some of its inherent abilities to support email management. In order to become truly effective in managing your in-box, the user must familiarize him or herself with the capabilities of Outlook® and its fundamental tools that allow one to create folders, route messages, prioritize tasks, and archive (Girrier, 2003). For example, Outlook® allows the user to automatically sort, group, prioritize, forward or delegate and archive email by date, sender, and subject. In addition, you can use flags to highlight emails that require follow-up and both set and delegate reminders to complete related actions. Outlook will also accommodate the creation of rules and filters to automatically perform an almost limitless set of functions to aid in email management ("Don't let," 2005; Sherwood, 2001). Finally, Outlook® provides an "Out of Office Assistant" feature that will not only notify senders of your absence, but provide alternate contact information and temporary delegation of incoming emails to another person's in-box ("Don't let," 2005). This particular tool can be used to set expectations and relieve some of the pressure for an instant response when you are out of the office or just unavailable due to a meeting (Wilson, 2005).

Deerfield Communications, Inc. offers their VisNetic MailFlow product, an email management system that automatically collects and processes inbound email messages. It creates "tickets" which are subsequently routed to appropriate queues where they are then acted upon by pre-designated action officers. These tickets are essentially routinely generated threads of related email correspondence. MailFlow tool also provides centralized storage and retrieval for all inbound and outbound email. In addition, VisNetic MailFlow supports a report generation for inbound and outbound email trend analysis and processing (Richards, 2002; "VisNetic MailFlow," undated). This system

can be configured to efficiently process incoming email, move it to the appropriate individuals, track progress, and provide archives. Although it is primarily marketed as a tool to improve customer-based email traffic and improve service response, it is envisioned that this and similar tools have potential applications to upper management and to those who have to deal with significant email loads. Such a tool could be used to quickly and efficiency move mail out of a supervisor's in-box and disseminate it amongst staff for timely action.

3. Dealing with the Overload

Not only did our research uncover recommended best practices in composing emails, it also addressed ways to handle email and combat the information overload. It is even estimated that one may increase their efficiency by 25 percent through email management techniques (Seeley & Hargreaves, 2003). Time should be allocated each day to specifically manage email without distraction (Wilson, 2005). Girrier referred to email in-box management as conducting "administrative triage." He was referring to a methodology of systematically going through an accumulation of email, for instance when you arrive at work in the morning or return from vacation, as separating the important from the unimportant, and prioritizing those that need to be processed (Girrier, 2003). This would involve an initial scan, dissemination amongst subordinates as appropriate and prioritized follow-ups for those that need personal attention. Care must be taken to ensure that the quality of responses and delegation is maintained. A focus to simply clear out your in-box may otherwise result in congestion of somebody else's in-box or the omission or misinterpretation of an important assignment (Wilson, 2005).

Seeley and Hargreaves (2003) look at managing the overload as a three step process. First there is a need to prioritize email in general and to ascertain where it fits in your work day. Proper email management requires the appropriate allocation of time, both scheduling and duration. Second is an effective use of technology. This would include the utilization of email tools inherent in email software. Finally, the third step is for a user to audit their in-box and determine which emails they really need to act on versus which emails are unnecessary, distracting, and the principal contributors to

information overload. This final step requires the user to conquer his or her fears that important information may be missed or deleted, and requires both confidence and an absolute understanding of what is necessary to effectively perform the job (Seeley & Hargreaves, 2003).

Rules can be established in most email systems that can sort, file, and forward incoming email automatically (Stack, 2004). For instance, the user can set up his/her email software program to sort or file based on receipt from superiors, and can routinely forward messages with key words related to the functional areas of subordinates. Such key words can also be used to perform intelligent archiving, a method where emails are automatically removed or copied to file folders or archives for retrieval in the future ("Intelligent Archiving," undated).

Dealing with the overload involves managing oneself as an individual initiator and recipient of email as well as a team member or leader. As the individual, you must use discipline to reduce the number of times you check your in-box for new email. Constant monitoring can be distracting and time consuming to both yourself and, in the case of those who take their laptops or Blackberries into meetings, your co-workers. Personal efficiency is also a fundamental key to reducing the overload. The email user must learn to handle his or her messages once. Open the email and take care of it, whether you work an action immediately, delegate it, delete it, or intelligently file it for later use, it is important to move it out of an over-filled in-box and avoid having to re-open it or search for it later. As a team member or leader, you need to talk to people whenever possible. Avoid passing emails when you can talk face-to-face or on the phone. It is also important to establish and follow team rules, to understand the preferences of your superiors, and to make your preferences known to your subordinates. Help those you communicate with help you to reduce your overload and in return, be cognizant of what best reduces your contribution to other people's overload (Seeley & Hargreaves, 2003).

E. INDUSTRY INTERVIEWS

Three separate interviews were conducted with employees from three leading IT providers, henceforth known as *IT Provider One, IT Provider Two,* and *IT Provider Three.* These providers were selected because they are the forefront of the computing industry and could provide leading-edge insight into email usage. However, the authors of this Joint Applied Project did not obtain legal and managerial approval to publish the names of the companies who participated, so it was agreed to keep the interviewees, and their associated companies, anonymous. These interviews centered on the topics of email usage, policy, and information overload. Each indicated a general lack of a formal email policy beyond standard security and privacy rules. The interviewee from *IT Provider One* did mention a retention policy governing both the duration emails can be preserved and the size of the user's mailbox. *IT Provider Two* also has a specific mailbox size limitation, 200 megabytes for typical users and 400 megabytes for executives, as well as a 10 megabyte limit for individually transmitted emails. Only the *IT Provider Three* interviewees indicated any formal email policy, but this published policy was specifically intended for customer marketing, not for general work related email, and did not address policy towards diminishing or handling email overload.

Those interviewed did indicate that corporate guidelines existed with respect to email. In addition to the formal email policy that *IT Provider Three* has for customer marketing, it also has general email guidelines and an online tutorial for employees. It was noted, however, that there is no enforcement of these guidelines or enforcement of completion of the tutorials. *IT Provider Three* does have bi-yearly (every six months) mandatory training for its employees, on email privacy, usage and efficiencies. *IT Provider One* also has "informal" training available that touches on email best practices. *IT Provider Two* interviewees reported to have a list of email best practices that were included as part of new employee training. Otherwise, even though this list was published and available to all employees, it had to be sought out and was not "pushed down" to the workforce.

When asked about email inefficiencies, those interviewed from both *IT Provider Two* and *IT Provider Three* mentioned the adverse use of distribution lists and the "Reply

to All" feature. *IT Provider Two* even had an incident in 1999 where its network was almost brought down by an email message that had a large distribution list and was repeatedly subjected to the "Reply to All" feature. Employees are still reported "proudly" wear the "Bedlam '99" t-shirts on the *IT Provider Two* campus. *IT Provider Two* was also reported as being a heavily email structured company where email was actually used more often than picking up the phone. As one would expect, there is a lot of research going on at *IT Provider Two* in the area of email usage, and in fact *IT Provider Two* is currently studying issues regarding email storage. A recent scan of approximately 60 percent of the *IT Provider Two* workforce resulted in the finding that there is over 100 terabytes of email on employee hard drives. *IT Provider Two* is investigating ways of reducing this statistic.

There was an almost universal feeling of email overload among those interviewed, each reporting anywhere from 60 to 100 emails received daily with 20 percent to 40 percent requiring some required action. Those from *IT Provider Three* referred to email as a "double-edged sword," facilitating efficiency and productivity while at the same time negatively affecting one's quality of life. They expressed being overwhelmed by email, often spending evenings and weekends reading it just in order to keep up with the traffic. The existence of email meant that you were never out of reach from customers and co-workers around the globe, and many *IT Provider Three* employees were provided Blackberries to "assist" them. This assistance necessitates setting priorities in your life. You have to know when to turn the Blackberry off. One interviewee from *IT Provider One* stated that email is the symptom, not the problem. The problem is an underlying communication issue.

III. RESEARCH METHODOLOGY

A. INTRODUCTION

This chapter explains how the research was conducted. To determine the frequency and effectiveness of email in the US Army Project Management office, our study was divided into four phases. First, a literature review was conducted and practices in other firms were examined. Second, logs were collected of actual email use. Third, a questionnaire was distributed to examine email use among personnel within the PEO. And finally, a group of emails that were deemed "problematic" were analyzed.

B. EMAIL LOGS

To examine actual email behavior, the five authors of this study agreed to log one week of email. Based on a previous study and a sample of one day of email, one of the authors developed a pilot log form. The form was created in a spreadsheet used to record all the pertinent information for each email. Along with the spreadsheet was a legend that provided instructions on the data codes to be used for each category.

To assure that all members were using similar methods to code their emails, a training session was held where a consensus was reached regarding the approach. The outcome of this training session produced a set of business rules that described the rules of engagement. Most of the responses were intuitive to the authors; however, two areas needed further clarification. A multiple string was defined as an email that had been forwarded or replied to more than once. It was determined that if this type of email was new to the recipient it was counted as a multiple string and coded as "MS." However, if an email with multiple strings was previously read by the recipient, and only the last message of the string was new, then it was counted as "#MS" (# defined by the length of the last email in the string).

Table 1 is the data collection spreadsheet used to record information for each email received.

Table 1. Email collection spreadsheet

Date of Email	Time of Email	Time Spent on Email	Re-read?	Read entire Email?	Last Name of Sender	Role of Sender	Length of Email	Primary Purpose of Document	Clarity	Notes	Candidate?
			Y=Yes **N**=No	**y=yes** **N=No** **L=Later** **S=Skimmed** **NO=Not opened**		**1**=superior **2**=subordinate **3i**=peer (internal) **3e**=peer (external) **4**=vendor **5**=other (name) **6**=personal **7**=professor **8**=customer	**1**=1-4 lines **2**=5-10 lines **3**=11 lines + **A**=attachment **MU**=multiple attachments **MS**=multiple strings	**1**=action request **2**=status update **3**=reminder **4**=information response **5**=scheduling request **6**=scheduling response **7**=social content **8**=bulk Email **9**=FYI **10**=duplicate msg **11**=Huh?	**1**=unclear **2**=so-so **3**=clear		**Y**=Yes **N**=No

Table 2 presents the categories that were used to examine the amount of time spent reading each email. Participants were instructed to choose one of the categories that were presented in the legend.

Table 2. Time Spent on Email

Variable	Description
<1	Less than 1 minute spent reading/processing Email
1	1 minute spent reading/processing Email
2	2 minutes spent reading/processing Email
3	3 minutes spent reading/processing Email
4	4 minutes spent reading/processing Email
5	5 minutes spent reading/processing Email
Blank	No response given
Zero	No time spent on reading/processing Email
=>6	More than 6 minutes was spent reading/processing Email

Tables 3 and 4 capture information regarding how the participant read the email. Was the email read? If so, was it read in its entirety, skimmed, or skipped over.

Table 3. Re-read Email?

Variable	Description
Y	Yes; Email was read
N	No; Email was not read

Table 4. Read Entire Email?

Y	Yes; entire Email was read
N	No; entire Email was not read
L	Later; Email will be read later
S	Skimmed; Email was skimmed over
NO	Not Opened; Email was not opened

Table 5 was designed to capture the role of the sender. Based on knowledge of this organization's stakeholders, categories were developed to determine the sources of email—internal vs. external, upward, downward, and lateral.

Table 5. Role of Sender

Variable	Description
1=superior	Sender of Email is superior/supervisor
2=subordinate	Sender of Email is a subordinate
3i=peer (internal)	Email was sent by a peer who works in receiver's organization
3e=peer (external)	Email was sent by a peer who works outside receiver's organization
4=vendor	Email was sent by a vendor
5()	"Other" category – can be followed by a name, title of sender. Used as a catch-all category
5=other (name)	"Other" category – can be followed by a name, title of sender. Used as a catch-all category
6=personal	Email was sent by personal contact – non-mission related
7=professor	Email was sent by a professor/educator
8=customer	Email was sent by a customer/client

Table 6 captures the length of the email, as well as the number of attachments included and the number of times the email was forwarded or responded to. Multiple variables may apply to each email in order to annotate the length of an email as well as it having multiple attachments and/or strings. Thus, the total quantity in this table will be greater than the total number of emails analyzed.

Table 6. Length of Email

Variable	Description
1=1-4 lines	Email received was 4 or less lines long
2=5-10 lines	Email received was between 5-10 lines long
3=11 lines +	Email received was more than 11 lines long
A=attachment	Email contained 1 attachment
MU=multiple attachments	Email contained multiple attachments
MS=multiple strings	Email had multiple strings (e.g.: numerous *FW*s, *RE*plies within same email, etc.)
Blank	No data captured in log

A pilot test was conducted by one author to ensure the methodology and approach was sound and would yield useful data. Once confirmed, the full data collection process began.

Data collection took place over five consecutive work days. During this period, the authors saved their email to an archive, logged it into a spreadsheet, and categorized them using the appropriate codes.

The authors of this Joint Applied Project served as the data collectors in this phase of the study. The average age of the authors is 45, and they have an average of 10 years in the Project Management arena as Subject Matter Experts. They are considered mid-level managers, with the exception of one being a Deputy Product Manager.

At the conclusion of the data collection period, the author's data logs were collected and tallied. Totals for each category were calculated, and statistics provided for each category. These findings, in conjunction with the focus group findings served as the basis for the development of a questionnaire.

C. QUESTIONNAIRE

A questionnaire was developed to collect information regarding email habits, perceptions, and a general profile of email traffic among employees within PEO EIS. This questionnaire contained 24 questions that addressed the volume of email, time spent, purpose, clarity, and the use of tools to help manage email. Additionally, data were

collected to determine if in fact email is the primary method of communication used within a typical Army Program Management Office, or if other means were more prevalent.

To aid in the development of the survey, a two-hour focus group was held with personnel representing various career fields within the organization. During this session, a short survey was given to determine the scope of email usage within their individual jobs. In addition to the survey, a discussion was conducted where the facilitators presented open-ended questions to stimulate conversation. This allowed the participants to elaborate on personal experience.

At the onset of the session rules of engagement were established to maximize participation. The authors provided background information regarding this joint applied project. Rules of engagement included assurances of anonymity and non-attribution.

Questions presented in the questionnaire and during the open forum are identified in Table 7 below:

Table 7. Focus Group Questions

How many emails do you receive each day?
How many emails do you send each day?
How many emails do you read each day?
How many emails do you delete w/o reading get each day?
How many emails go unread each day? To be read another day
How much time do you spend reading email each day?
How much time do you spend responding to email each day?
What percentage of your day is spent on email?
Is your email open all day?
Do you respond to each email as it arrives?
Do you set aside a certain time each day to read/respond to email?
Does email help you in your job? If so, how?
Does email hinder your job performance? If so, how?
What is your biggest pet peeve regarding email?
What might be done to improve the use of email in our organization?

After the focus group was conducted, a pilot questionnaire was distributed within a single PM Office that represented the PEO EIS organization. This pilot group of 13 personnel was used to ensure the questions were clear, the time required to complete the

questionnaire was reasonable, and the responses would provide us with useable data for further research. Upon analysis of the results of this pilot questionnaire, it was determined that the questionnaire would take less than 5 minutes to complete, and several questions were modified to incorporate minor adjustments. These adjustments were in the area of formatting and question streamlining.

The questionnaire was emailed within the PEO EIS community which is comprised of 578 personnel. Since email is so prevalent within the organization, the authors assumed that there would be a single email distribution address that could be used to distribute the questionnaire to the entire organization. Prior to submitting the questionnaire, it was determined that no single distribution mechanism existed. The PEO is geographically dispersed throughout many locations worldwide, and many email distribution lists exist. They are categorized by location, category of personnel (managers, directors, technical staff), and by special interest (Contract Management Group, Financial Management, etc). In order to overcome this obstacle, the questionnaire was distributed by the PEO Executive Secretary via email to all PEO EIS administrative assistants. The administrative assistants were asked to further distribute the questionnaire to personnel within their functional group. Of the 578 personnel within the organization, it is unknown how many actually received the questionnaire. One hundred thirty one personnel completed the questionnaire. Responding to the questionnaire was totally voluntary and all responses were submitted anonymously, using the Zoomerang software tool. A copy of the questionnaire can be found in Appendix A.

D. EMAIL TEXT ANALYSIS

One of the original assumptions of this Joint Applied Project was that clarity of email was the major issue causing a feeling that email is ineffective and an inefficient means of communication. During the email logging process, it was determined that clarity was not a major issue; however, the authors became aware that the types of emails that were most problematic were short, from 1-11 lines in length, which often required less than a minute to read, but would often take hours to complete the requested action.

To conduct a thorough examination of the "problem" emails, the authors were instructed to pick one email each that best illustrated an email that was short in length, yet took many hours to complete the required action. An email text analysis session was held for the five authors to discuss their experiences with emails. This session was broken into two one-hour segments. The first segment addressed the work involved in completing the action required by a short email. Each participant reviewed a short email (1-11 lines) and discussed how much time the participant required to complete the action. Additionally, the participant would discuss the number of other personnel, locations used (e.g. at home, in the office after normal duty hours, on travel, or on vacation), and any other resources that were used in order to complete the action.

The second segment was an open discussion led by a facilitator. During this segment of the email text analysis, participants provided their experiences where they illustrated examples of email leading to feelings of being overwhelmed. The facilitator asked questions such as: *Why do you feel that email is overwhelming?* and *Why is email perceived as an ineffective, inefficient, but necessary means of communication?*

The feedback generated from both parts of the session permitted a thematic analysis to be completed whereby the authors could develop overarching themes regarding email, and back them up with personal data, as well as that from the PEO EIS questionnaire and literary review.

E. CHAPTER SUMMARY

This chapter documented the approach and methodology used to conduct this Joint Applied project. It serves as the basis for our analysis, findings, recommendations and conclusions.

IV. DATA ANALYSIS - RESULTS

A. INTRODUCTION

This portion of this Joint Applied Project evaluates the findings of the email collection log, questionnaire and thematic analysis of problematic emails. In order to explore clarity, efficiency, and effectiveness of email among personnel within Army Project Management Offices, the findings of this analysis will allow us to better understand how and why email is currently perceived as inefficient and unclear, thus leading to a feeling of being overwhelmed. It will also lead us to make recommendations for improving usage, as well as areas for further study.

B. EMAIL LOGS

The purpose of the email collection phase was to identify trends and areas of common concern regarding the ineffectiveness, inefficiency, and the feeling of being overwhelmed by email. The data collection took place over a five-day consecutive period. The data logs were collected and tallied. A total of 1,727 emails were logged during the email collection phase. Results are discussed below.

Table 8 shows the amount of time it takes to process each email. The data indicates that 70 percent of our emails take less than one minute to read. If the emails that are deleted without reading are included, then the results indicate that over 81 percent of our emails take less than a minute to read. Only three percent of the emails take five or more minutes to read. These findings were contrary to the impression that the time spent to read an email was a time consuming effort.

Table 8. Time Spent on Email

Variable	Total Qty	Percent
<1	1209	70.01%
1	106	6.14%
2	85	4.92%
3	36	2.08%
4	6	0.35%
5	49	2.84%
Blank	32	1.85%
Zero	191	11.06%
=>6	13	0.75%
TOTAL	**1727**	**100.00%**

Table 9 shows the number of times that an email had to be re-read to understand its meaning, purpose and/or action required. The results indicate that only three percent of the emails collected required re-reading. These findings were contrary to the impression that clarity of email was a significant issue, which would cause a larger number of emails to be re-read.

Table 9. Number of Times to Re-read Email

Variable	Total Qty	Percent
Yes	57	3.30%
No	1670	96.70%
TOTAL	**1727**	**100.00%**

The data in Table 10 served to establish a baseline of how personnel process their email. The logging session captured if email is normally read in its entirety, scanned with the intention of addressing at a later time, or perhaps even purposely ignored, which would indicate if email is read in its entirety upon initial opening of a message. The findings of the email collection show that over 54 percent of emails get read in their entirety. A rather small percentage, 11 percent, does not get read in their entirety upon initial processing. Surprisingly, less than one percent of the emails are opened with the

intention to “come back to this later”. The results also indicate that 13 percent of the emails collected were skimmed over. A rather interesting finding is that 20 percent of the emails that were received were not even opened. What is unclear from these findings is whether the 20 percent of emails that are not opened is due to volume (being overwhelmed), or if the 20 percent are considered unsolicited/spam messages. Therefore, the findings indicate that the majority of email is processed in its entirety. This area was further addressed in the questionnaire phase of this Joint Applied Project.

Table 10. Number of Times Entire Email Read

Variable	Total Qty	Percent
Yes	935	54.14%
No	197	11.41%
Later	12	0.69%
Skipped	230	13.32%
Not Opened	353	20.44%
TOTAL	**1727**	**100.00**

Table 11 examined the role of the sender to determine if there is any relationship between position of the sender, and the method that the receiver uses to process emails. The majority of the emails collected, 22 percent, were from peers outside of the organization. A close second, 20 percent, are those emails that come from peers within the organization. Combining the results for all emails received from “peers”, the data indicates that approximately 42 percent of all emails collected are from this group. Additionally, almost 10 percent of the emails received came from management. This data indicates that email is heavily used among peers rather than management, which further suggests that email, is a tool relied upon in order to accomplish daily tasks.

Table 11. Role of Sender

Variable	Total Qty	Percent
1=superior	167	9.67%
2=subordinate	282	16.33%
3i=peer (internal)	331	19.71%
3e=peer (external)	386	22.35%
4=vendor	141	8.16%
5=()	77	4.46%
5=other(name)	221	12.80%
6=personal	55	3.18%
7=professor	3	0.17%
8=customer	64	3.71%
TOTAL	**1727**	**100.00**

The data found in Table 12 was used to determine the average length of the emails received. The assumption was that this goes hand-in-hand with the time spent reading individual emails. Through this data, it was confirmed that the majority of emails are short in length, and take less than one minute to process. Specifically, the findings indicate that almost 40 percent of the emails received were very short (between 1-4 lines), a little over 10 percent of the emails had an attachment (or multiple attachments), and finally, that 20 percent of our emails have multiple strings. This last finding raised interest as to the reason why a single email was distributed multiple times, and thus had multiple strings. Since our findings above indicated that there was not the tendency to re-read email, it was assumed that multiple strings were not required to clarify emails. This study does not have enough data to determine the reason behind the prevalence of multiple string emails.

Table 12. Length of Email

Variable	Total Qty	Percent
1=1-4 lines	946	39.12%
2=5-10 lines	342	14.14%
3=11 lines +	190	7.86%
A=attachment	221	9.14%
MU=multiple attachments	29	1.20%
MS=multiple strings	486	20.10%
Blank	204	8.44%
Total	**2418**	**100.00%**

Table 13 captured the primary purpose of the emails collected. Almost 21 percent of the emails collected provided a status update, almost 19 percent are "FYI", and over 16 percent provide information that was requested. Added together, one can say that 56 percent of the collected emails provide some sort of information. Almost six percent of the emails were for scheduling meetings, while over 13 percent were considered "junk" mail. This begs the question, "Why did we not open 20 percent of our emails?" Surprisingly, less than one percent resulted in a "Huh" reaction (not sure of the intent of the sender) from the authors.

Table 13. Primary Purpose of Document

Variable	Total Qty	Percent
1=action request	294	17.02%
2=status update	360	20.85%
3=reminder	36	2.08%
4=information response	284	16.44%
5=scheduling request	62	3.59%
6=scheduling response	37	2.14%
7=social content	41	2.37%
8=bulk email	229	13.26%
9=FYI	327	18.93%
10=duplicate message	15	0.87%
11=Huh?	8	0.46%
Blank	34	1.97%
Total	**1727**	**100.00%**

The data provided in Table 14 documents the perception of clarity of individual emails received. Almost 43 percent of the emails were deemed clear, while only .75 percent of them were coded as unclear. Of special note is the fact that almost 55 percent of the collected emails were not coded for clarity due to one author not utilizing the field. This could skew the overall results found. It is an assumption that the 55 percent, if coded, would follow the same trend as seen in Table 14, but that can not be substantiated with the available data. The initial assumption of this joint applied project was that there is a perception that the majority of emails received are unclear, and thus would lead to a feeling of being overwhelmed. Table 14 indicates that perhaps clarity is not the central issue.

Table 14. Clarity

Variable	Total Qty	Percent
1=unclear	13	0.75%
2=so-so	36	2.08%
3=clear	737	42.68%
Blank	941	54.49%
TOTAL	**1727**	**100.00%**

Table 15 simply captures potential emails for further study and/or thematic analysis portion of this joint applied project.

Table 15. Candidate

Variable	Total Qty
Yes	**19**

C. PEO EIS QUESTIONNAIRE

Prior to releasing the questionnaire to the organization, a focus group was formed as a trial to ensure that the questions in the final questionnaire were appropriate. The focus group was comprised of four members of a typical Army organization. The focus group was comprised of action officers, administrative personnel, and technical

personnel. Unfortunately, no representatives from management were able to attend. The participants were asked to complete a short questionnaire on the use of email in their particular job. The focus group questionnaire can be found in Table 7 of Section III, Research Methodology.

1. Focus Group Results

The focus group began the session by completing a short questionnaire. Discussing the group's responses to the questionnaire provided a basis for open dialogue further elaborate on the amount of email received, and the time spent on those emails. The majority of the group indicated that they normally spend the first hour of each workday responding to email before the phones start ringing. This may be because the PEO EIS mission requires support to OCONUS locations such as South Korea, Germany, and Southwest Asia, and this short span of time is when PEO EIS personnel and OCONUS personnel are in the office concurrently. Participants also indicated that the bulk of emails arrive in the morning hours.

Half of the focus group responded that they receive between 76-100 emails daily. Twenty-five percent received 51-75 emails and another 25 percent received 25-50 emails each day. Our administrative participant received the least amount of email of all members. All felt that it was due to the administrative nature of her job.

When discussing how participants manage email, some claimed they respond to each email as soon as it arrives, while others scheduled time throughout the day to work on email. When questioned as to what form of communication takes priority, participants responded that they would answer the phone first, and address email second.

Participants indicated that, on occasion instead of sending a reply via email, they pick up the phone and answer the questions asked in the email. Sometimes, it just takes too long and is too complicated to compose a coherent email response. Also, you might need to speak to the person to get clarification on the email received. Some participants mentioned that they use email to get things in writing. A paper trail is important in some situations when you might need to document the history of an issue. Also, some said that

if you actually take the time to compose a message, you give it much more thought versus just blurting something out in conversation. Participants also noted that many times customers want an answer in writing so that they may refer back to it, or forward it on to someone else.

All participants responded that they receive many junk email messages each day. These junk email messages are deleted without reading. Examples of junk email include: luncheon flyers, bulk email messages, unsolicited flyers, and sales information from vendors. Participants mentioned frustration about being forced to read junk mail with misleading subject lines such as "Need Your Help" or "Information You Requested." Even though they are almost positive that it is junk email, it is possible that it is a legitimate customer requesting help, so the email needs to be opened just to be sure. As junk email senders get more sophisticated, it's getting harder to determine legitimate email from junk email.

Respondents then discussed their knowledge of, and use of, email tools. Tools such as "Out of Office Assistant", "Calendar", "Folders", and "Filters" were addressed. This discussion revealed that all participants use the "Out of Office" tool. This tool is used frequently to notify email senders that the recipient is not in the office, and the sender should not expect an immediate email response. The Calendar was another popular feature that was used by the focus group participants. The administrative participant found this tool especially helpful. She maintained a calendar that is used by the small group that she supports to schedule meetings. Within the calendar tool there is another feature called "Meeting Request." You can send an email to others asking them to either accept or decline an invitation to a meeting. If accepted, it will automatically update each individual's calendar with the meeting time. This feature will also work outside the organization. Most participants did not know about the meeting request feature.

Another tool that was discussed is "Filters." Only our technical participant used this feature. He stated that those in technical fields are more familiar with the tools available to them and use them more often. All participants knew of training classes that

were available to learn about tools and other features of email, but were too busy to take a class.

The focus group participants were asked some open-ended questions regarding email to generate conversation and stimulate thoughts:

Does email help you in your job? The overwhelming response to this question was yes. Some of the reasons why are that it provides a written trail, and it helps with communicating with others in different time zones. Participants felt that it did not help when the sender is sitting right next to you. At times, the intent of an email message can be misunderstood. Email is impersonal; one participant stated that they would rather get up, walk over to the person's desk and speak with them directly. Another participant stated that they would rather send an email. It's faster, and there is no time for the eventual chit-chat that normally occurs when speaking with someone directly. The tone of email was discussed. Our technical participant stated that they did not have any issue with this. Another noted that they had received email that they perceived as mean. When the author was confronted, they stated that the negative tone of the message was not the tone that they intended. Another participant had a customer that always sent email that appeared mean, yet in person they were pleasant and appreciative of all efforts made on her behalf.

A discussion ensued on the use of the "Return Receipt" feature. Most participants felt that it was okay to use this feature as long as the email author doesn't confront you on it. If you read an email at 10:00 a.m. and didn't respond to the email until 1:00 p.m., you should not be challenged on the amount of time taken to respond. Most participants stated that they begin to use this feature on people that consistently say they didn't receive their email. On future emails, the return receipt feature would be used to verify receipt of the email. Our technical participant told the group that this feature ensures that the email gets to the intended recipients server, but not necessarily to the individual's email box.

The focus group was also asked: *How does email hinder your job performance?* Most felt that they were overwhelmed by the volume and amount of time required to

respond to email, but felt that it is a necessary evil. There was frustration expressed regarding people that send bulk email jokes. It's sometimes hard to find the humor in an email message when you are stressed just trying to get through all the email. Another hindrance mentioned is an email that has been forwarded many times. You first attempt to take the shortest route and read the top (most recent) email first. When the meaning of the message is unclear, you read the next message. When it is still unclear, you give up and begin to read all of the forwarded messages from the bottom-up. This bottom-up approach goes against your natural instinct of reading from the top down, but it's the only way to get a clear understanding of the intent of the message.

Our administrative participant raised an email issue that was unique from others in the group. She felt that the people in her office were overwhelmed with email and therefore did not take the time to read emails that are of an administrative nature. She stated that her office, and especially her boss, filters email by name and just reads what they think are the most important. No attention is paid to internal administrative email. To work around this, she prints out the email messages that she had previously sent, highlights portions that need attention, and puts the hardcopy email on individual desks. This is her solution to get the answers she needs from others in order to reply back to email questions she is responsible for.

The focus group was then asked: *What is your biggest pet peeve regarding email?* The first pet peeve to come to everyone's mind was when someone selects "Reply to All" to a general announcement when they only intended to reply to the sender. This happens to most people only once. It is so embarrassing, that after you do it once, you are much more careful in the future to not let it happen again. Our participants were very cautious when using the "Reply to All" feature. Participants responded that they sometimes use the "Reply to All" but will delete some names, rearrange some names from the "To:" line to the "CC" (carbon copy) line before sending.

Another pet peeve is people who mark everything urgent or those who make their name and subject in red so that it stands out amongst all other emails in you inbox. This equates to the "boy who cried wolf"; all email is not urgent, so after awhile, recipients tend to ignore these markings because they become meaningless. Another pet peeve is

the use of shorthand in email. For example, typing LOL as a shortcut for "laughing out loud." Older participants didn't always know what the shorthand meant. Younger participants knew exactly what they meant. They stated that these shortcuts come from the use of instant messaging.

When asked: *What might be done to improve the use of email in our organization*? there were not many responses. The group recommended creating a bulk email folder. All general announcements could be placed in there, so there would be no need to send bulk email messages to everyone. Employees could then read these announcements when time permitted.

When the group was asked if they read email at home, while on vacation, or when TDY, only 25 percent responded "yes." The remainder said that they purposely do not read email when they are out of the office. They reasoned that if they did, they would have no down time.

2. Questionnaire Results

Based upon the results of the email collection, the focus group questionnaire, and discussion in the focus group, a final questionnaire was prepared. This final questionnaire was first distributed as a test to 13 employees of the Army Small Computer Program. Feedback obtained from the test group verified that the questionnaire was easy to understand, contained no confusing questions, and could be completed within five or six minutes. The questionnaire was then sent out to the entire organization. Of the approximately 578 employees in the organization, 193 opened the questionnaire, and 131 completed the questionnaire and submitted their responses. PEO EIS does not have an email distribution list that will reach all personnel in the organization. Therefore, it is impossible to tell if all employees actually received the questionnaire since distribution depended upon the willingness of administrative personnel to forward the questionnaire within their smaller groups. In addition, completing the questionnaire was purely voluntary on the part of the employee. The combined responses to each question are provided below.

Table 16 represents the question regarding demographics. Twenty-eight percent of those responding were from management, 38 percent were action officers, 22 percent were from technical fields, and 12 percent were administrative personnel. These figures are representative of the actual demographics of the organization.

Table 16. Question #1 – Demographics

1. Which best describes your position?	Number of Responses	Response Ratio
Management	36	28%
Action Officer	49	38%
Technical	29	22%
Administrative	16	12%
Total	130	100%

Table 17 shows that the majority (40 percent) of the respondents answered that they received 26-50 emails each day. An equal number of respondents, 21 percent, said they receive between 1-25 and 51-75 emails each day. A very small percentage, six percent, received over 101 emails each day.

Table 17. Question #2 – Daily Volume of Email

2. How many emails do you receive each day?	Number of Responses	Response Ratio
1-25	27	21%
26-50	52	40%
51-75	27	21%
76-100	16	12%
101-125	4	3%
126-150	2	2%
150+	2	2%
Total	130	100%

Table 18 shows the portion of the workday that is spent on email. Forty-eight percent stated that they spend between 1-3 hours each day on email; while 30 percent said they spend 3-5 hours per day on email. A small percentage, 12 percent, spend less than one hour per day, and an even smaller percentage, nine percent, spend more than five hours per day on email. It is unclear from the data below whether the respondents took into account the amount of time spent to research, compose, and respond to email, or just the amount of time required to read their email.

Table 18. Question #3 – Hours Spent on Email During Workday

3. How much of your workday do you spend on email each day?	Number of Responses	Response Ratio
< 1 hour	16	12%
1 - 3 hours	63	48%
3 - 5 hours	39	30%
> 5 hours	12	9%
Total	130	100%

Respondents were asked to identify the amount of time that they spend during off-duty hours working on work-related email. Table 19 shows that almost half, 43 percent, said that they spend less than one hour per day; and one third said that they spend between 1-2 hours per day. Eighteen percent said that they didn't spend any of their off-duty time on work-related email and only three percent said that they spend more than two hours. This shows that for 82 percent of the respondents, the work-day does not end when you leave the office; they will spend up to an additional two hours working on work-related email during non-duty hours.

Table 19. Question #4 - Time Spent on Email During Non-duty Hours

4. How much of your NON duty hours do you spend on work-related email each day?	Number of Responses	Response Ratio
None	23	18%
< 1 hour	59	46%
1 - 2 hours	43	33%
> 2 hours	4	3%
Total	129	100%

Table 20 indicates that, when asked how often respondents felt overwhelmed by email, 55 percent said occasionally, 21 percent said often, and 24 percent said never. This question indicates that over three quarters, 76 percent, of the respondents are overwhelmed by email at some time.

Table 20. Question #5 – Overwhelmed by Email?

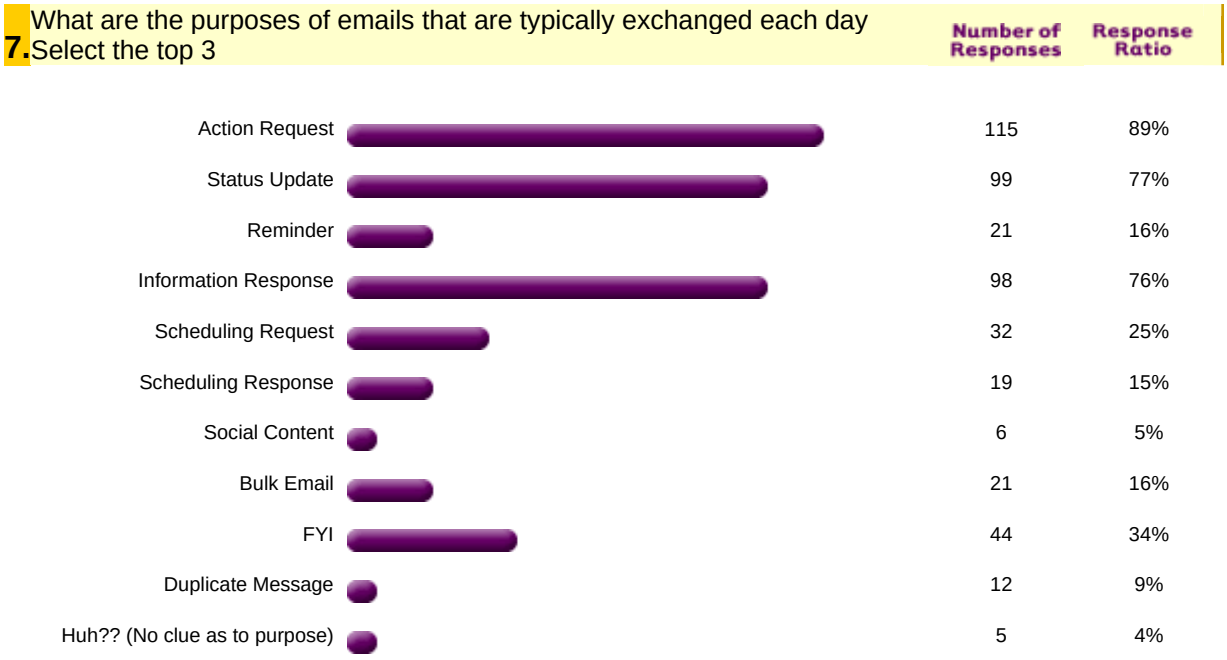
5. How often do you feel overwhelmed by email?	Number of Responses	Response Ratio
Often	27	21%
Occasionally	72	55%
Never	31	24%
Total	130	100%

Question #6 of the PEO EIS questionnaire was an open ended question that asked the respondents *Why do you think you're overwhelmed?* This question generated 91 open ended responses that are located in Appendix B. In summary, the major reasons for feeling overwhelmed were volume of email; the time required to coordinate, gather data, and respond to email; the often immediate response that is expected; too much junk and duplicate emails; and receiving copies of email that are of no real value. One respondent summarized their feeling of being overwhelmed by email by stating: *"50 priorities, all*

number one and all due yesterday." Another respondent stated their frustration over junk and duplicate email by stating: *"Why am I getting all of this crap?"*

The question in Table 21 seeks to determine the type of email that is received. Respondents were asked to select the top three types of email that they receive each day. Overwhelmingly, the top three types are Action Request (89 percent), Status Update (77 percent), and Information Response (76 percent). All of these types of email require a response from the recipients. Back in Table 17, 40 percent of the respondents stated that they received between 26-50 emails each day. Couple this with the findings of Table 21 below; one can see that this organization spends a significant amount of time developing responses to email that require some type of action. This may contribute to the feeling of being overwhelmed.

Table 21. Question #7 – Email Purposes



In Table 22, respondents were asked to identify the usual length of the emails they receive. Almost half of the respondents said that they are between 5-10 lines long. However, back in Table 18, 48 percent of the respondents stated that they spend between

1-3 hours and 30 percent said they spent between 3-5 hours on email each day. This shows that the length of the email message does not relate to the amount of effort or time required to respond to the email. A short email message may result in a large of time and effort required to adequately respond.

Table 22. Question #8 – Length of Email

8. What is the usual length of an email message?	Number of Responses	Response Ratio
1 - 4 lines	27	21%
5 - 10 lines	64	49%
> 11 lines	39	30%
Total	130	100%

Table 23 indicates that 67 percent of respondents answered that between 11 percent and 50 percent of their email contains attachments, links to web sites, or has been forwarded multiple times before it reaches them. This requires additional time to open and read attachments and/or connect to other web sites to determine the appropriate action required. It may also require the recipient to read a lengthy email from the bottom to the top in order to comprehend an email that has been forwarded multiple times.

Table 23. Question #9 – Email with Attachments, Links, or Forwarded

9. What percentage of email contains attachments, links, or has been forwarded multiple times?	Number of Responses	Response Ratio
< 10%	27	21%
11 - 25%	45	35%
26 - 50%	41	32%
> 51%	17	13%
Total	130	100%

Table 24 indicates that almost half of the respondents stated that less than 10 percent of their email messages required them to re-read the message in order to understand the purpose/action required. Thirty-two percent answered that between 11 percent and 25 percent of their emails must be re-read. This indicates that, at most, only one out of every four emails requires re-reading. The responses to this question reveal that clarity of email does not appear to be a major reason for email distress.

Table 24. Question #10 – Percentage of Email Re-read

10. On an average day, what percentage of email must you re-read to understand the purpose/action required?	Number of Responses	Response Ratio
< 10%	64	49%
11 - 25%	41	32%
26 - 50%	19	15%
> 51%	6	5%
Total	130	100%

In Table 25, 59 percent of respondents stated that it took one minute or less to understand the purpose or action required in an email. Thirty-eight percent stated that it took between 2-5 minutes. Very few respondents (four percent) said that it took longer than five minutes to understand the purpose or action required. It appears that the time to understand the purpose or action required is not a major factor in the portion of the workday spent on email.

Table 25. Question #11 – Time to Understand Purpose/Action

11. How long does it usually take to understand the purpose or requested action in an email message?	Number of Responses	Response Ratio
< 1 minute	35	27%
1 minute	41	32%
2 - 5 minutes	49	38%
6 - 10 minutes	4	3%
> 10 minutes	1	1%
Total	130	100%

In Table 26, respondents were asked to rank what action they take when they receive an email message that is unclear. The most popular response was to first re-read the message (80 percent); followed by sending an email back to the sender to get clarification (17 percent). Sending an email back for clarification is quick and can most likely generate an equally quick response. The next most popular response (11 percent) was to walk over to the sender's desk. This assumes that the sender is located within a short distance of the receiver. In last place at nine percent is to telephone the sender. One might assume that people selecting this response might not be able to walk over to the sender's desk. These last two responses are most likely determined by the proximity of the sender and the receiver.

Table 26. Question #12 – Email Clarification

12. For unclear email messages, which of the following actions do you take to get clarification? Rank from highest (1) to lowest (4).				
The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option	1	2	3	4
1. Re-read the email message	80% 101	11% 14	3% 4	6% 8
2. Email back to request clarification	17% 22	47% 60	17% 22	18% 23
3. Telephone the sender	9% 12	26% 33	49% 62	16% 20
4. Walk over to the sender's desk	11% 14	14% 17	21% 26	54% 66

In Table 27, respondents were asked for the three most frequently used factors that determine the intent and/or action required in an email. Ninety-two percent said that the content of the email was the most frequently used factor. In order to determine content, the email must be opened, read, and understood. This requires time. Seventy-eight percent said that the subject line helps to determine the intent/action, and 67 percent said that location on the address line helps determine intent/action. Factors that help determine intent/action to a lesser degree are message organization (20 percent), word choice (14 percent), and tone (seven percent).

Table 27. Question #13 – Factors Determining Intent/Action Required

13. Which of the following factors help you determine the intent and/or action required in an email? Choose the 3 most frequently used.	Number of Responses	Response Ratio
Your location on address line (To, CC, BCC)	87	67%
Subject Line	100	78%
Content	119	92%
Organization of message	26	20%
Word Choice	18	14%
Tone	9	7%

As indicated in Table 28, when asked to choose the top three email tools used, the most frequent responses were: folders (91 percent), calendar (81 percent), and the out of office tool (54 percent). The frequent use of folders reveals that there is a large enough volume of email received that must be maintained, archived, and organized into folders. Used to a lesser degree were: search (34 percent), flags (27 percent), and filters (12 percent). Only five percent responded that they used tools other than the six listed below, leading us to believe that the most frequently used tools were captured in the questionnaire.

Table 28. Question #14 – Email Tools

14. Do you use any of the following email tools? Choose the 3 most frequently used.		Number of Responses	Response Ratio
Filters		15	12%
Folders		117	91%
Out of Office		69	54%
Calendar		104	81%
Flags		35	27%
Search		44	34%
Other		7	5%

When asked if most of their email was internal or external to the PEO, the responses found in Table 29, were almost evenly split at 55 percent internal and 45 percent external. PEO EIS is a geographically dispersed organization. An internal email could be sent from Kuwait and read in Fort Belvoir, VA with carbon copies sent to Fort Monmouth, NJ and the Pentagon. An example of an external email could be an email sent from the headquarters building at Fort Belvoir, VA and received across the street at Army Materiel Command, Fort Belvoir, VA.

Table 29. Question #15 – Internal or External

15. Are most of your emails internal or external to the PEO?		Number of Responses	Response Ratio
Internal		71	55%
External		57	45%
Total		128	100%

When asked where most of the email comes from by ranking from most to least, Table 30 shows that 43 percent responded that it came from their peers, 30 percent responded that most email was from their superiors, 16 percent responded subordinates, 10 percent responded vendors, and 14 percent responded that it came from other sources.

The second ranking was very similar to the first ranking with 33 percent saying peers, 32 percent superiors, 14 percent subordinates, 13 percent vendors, and eight percent, other. This would appear that an almost equal number of emails come in the form of information from colleagues as from taskings from superiors.

Table 30. Question #16 – Who is Your Email From?

16. Who is the majority of your email from? (Rank in order from most (1) to least (5).

The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option	1	2	3	4	5
1. Superiors	30% 38	32% 41	21% 27	9% 12	8% 10
2. Peers	43% 56	33% 42	12% 15	10% 13	2% 3
3. Subordinates	16% 19	14% 17	29% 35	13% 15	28% 34
4. Vendors	10% 12	13% 16	19% 23	27% 34	31% 39
5. Other	14% 17	8% 10	16% 20	31% 39	31% 39

When asked if email was used to communicate instead of face-to-face, 63 percent responded frequently, 29 percent responded sometimes; seven percent responded always, and only two percent responded that they never use email to communicate instead of speaking with the individual face-to-face. Table 31 shows that email is the most commonly used form of communication within the organization.

Table 31. Question #17 – Email vs. Face-to-Face

17. Within PEO EIS, do you use email to communicate instead of face-to-face communication?	Number of Responses	Response Ratio
Never	2	2%
Sometimes	37	29%
Frequently	81	63%
Always	9	7%
Total	129	100%

When asked what the primary method of communication was within the office, email and face-to-face were close with 54 percent and 44 percent respectively. Only two percent said the phone was the primary method. While the PEO is geographically dispersed, an office (APM, PM) is located in one geographic location and usually in the same building with offices near each other. Table 32 reveals that within PEO EIS, even when individuals are within close proximity to each other, email is used more often than face-to-face communication.

Table 32. Question #18 – Communication Within the Office

18. Within your office (APM, PM), what is the primary method of communication?	Number of Responses	Response Ratio
face-to-face	57	44%
phone	2	2%
email	70	54%
Total	129	100%

When asked the primary method used to communicate outside of the office, Table 33 shows that email was the overwhelming response with 82 percent. Only 16 percent responded phone, and only two percent responded face-to-face. Not surprisingly, no one chose video teleconferencing as the primary method. As a geographically dispersed organization, email is a cost effective method of communication that can help overcome the challenges of communicating between multiple time zones.

Table 33. Question #19 – Communication Outside the Office

19. When communicating outside of the office, what is the primary method of communication?	Number of Responses	Response Ratio
face-to-face	3	2%
phone	21	16%
email	106	82%
VTC	0	0%
Total	130	100%

When asked: *How does email help you do your job?* 111 open-ended responses were received. Responses can be found in Appendix C. One of the major themes found in the responses was that email saves time. Many times the email recipient can provide a quick response when asked a simple question. One respondent said: *"It's quick, easy and you can reach out and touch a multitude of individuals all at once."* There is no need to take the time to place a phone call and hope that the person is at their desk to answer the phone. An email can be responded to at the receiver's convenience. Another major theme found in the responses is that email provides a paper trail. One respondent stated: *"Saves time and provides a paper of trail for actions."* Another stated: *"Email puts requests in writing so that you can keep track of when actions take place and see what the specific requirements were."* An email message can be saved and referred back to later if clarification is required or if issues develop. A third major theme was that email allows information to be dispersed to many quickly, allowing for timely coordination among multiple addressees.

When asked: *How does email hinder your job performance?* 109 responses were received. Responses can be found in Appendix D. Seventeen respondents replied that email did not hinder their job performance at all. One respondent commented that*: "I don't believe it hinders, I believe it can become daunting after you've been away from your desk for several days."* Another responded: *"I don't feel e-mail hinders my job performance, but that it enhances and allows you to be multi-functional."*

Eighty-five percent of the respondents answered that email was a hindrance. Some felt that the sheer volume of email was a problem. One respondent stated: *"It wastes my time, because I receive too much email that is: not concise, unrelated to my performance, not accurate to the facts or out-dated, etc."* Other respondents mentioned the volume as a hindrance. *"Too many - it can be overwhelming and you spend all of your time in the care and feeding of your inbox."* Another stated: *"Too many unnecessary emails being sent out that does not need to be sent out. People don't take the time to screen who the email should be sent to and simply use the "shotgun" approach."* And still another stated: *"Volume is huge. Hit and run scene - e-mailing considers task accomplished when the send button is pressed, regardless of quality of message sent. It is harder to plan a workday because it's easy to get trapped reading the mail."*

Some of the same features of email that respondents identified as helping their job performance were also identified as a hindrance. For example, when a respondent was asked how email helps them do their job, they stated: *"It helps me distribute action items or information to a group of people all at once."* However, this same feature was identified as a hindrance by a respondent who stated: *"because it [email] is quick and easy there is a tendency to add people to the distribution list that may not necessarily need to be on it and being on the receiving end it becomes a hindrance."* This also contributes to the volume of email received and people receiving email that may not pertain to them. A complete list of responses to questions: *How does email help you do your job?* and *How does email hinder your job performance?* See Appendices C and D, respectively.

When asked: *What is your biggest pet peeve regarding email?* spam, chain, and bulk email were common responses. Other pet peeves included the use of "Reply All" when the message was intended to go back to the originator – not everyone on the address list. Some respondents complained about receiving email that has been forwarded multiple times. Two examples of quotes from the respondents are: *"People who send a long string of e-mail correspondence with the message "See Below", and expect me to read the whole string from the bottom up (instead of providing a short summary of the issue they need a response to)"* and *"When you have to read through a*

ridiculous amount of forwards to get to the initial information and to determine what the e-mail is about."

To a lesser degree, respondents also mentioned the following: the use of read receipts, using email instead of face-to-face communication, and *"an erosion of grammar, disregard for formal communication, and an erosion of personal interface and voice communication."* A complete list of responses can be found in Appendix E.

When asked: *What might be done to improve the use of email in PEO EIS?* some respondents didn't have any suggestions for improvement or they stated that*: "I think it is used pretty efficiently, overall."* However, others felt that there was some room for improvement. Email policy, guidelines, and training were common themes. Respondents stated that they would like to see limits imposed on the number of addresses allowed on the "To" and "CC" lines. Another suggestion was to provide email training for all new employees. One respondent stated that they would like to see a *"Rules of Email Etiquette class required for all employees."* A complete list of responses can be found in Appendix F.

When asked: *Is there anything else you would like to tell us about email usage?* respondents used this as their opportunity to get things off their chest. Some conflicting comments are noted here: *"E-Mail's are routinely misunderstood, causing overreaction by personnel involved."* Another stated: *"E-mail is great for technical people as it is deliberate and can say exactly what needs to be said. I would be much less effective without it."* Comments regarding email as a primary communication tool were: *"I would like to say that email is cheaper and quicker than a phone call (in some cases)." "People are more likely to check their email rather than checking their voice mail." "Besides the phone, it's the best communication around."* However, another stated: *"Think about using other methods of communication before using email."*

Many respondents stated that email has become a regular part of their workday. *"It's a necessary evil"; "We cannot work without it, but it drives you crazy"; "Can't live or work without it!"* A complete list of responses can be found in Appendix G.

D. EMAIL TEXT ANALYSIS

One of the Joint Applied Project's original assumptions was that clarity of email was one of the major issues causing a feeling that email is ineffective and an inefficient means of communication. Both the email logging session and the PEO questionnaire showed that clarity was not the major issue. Ironically, the authors became aware that the types of emails that were most problematic were in fact short, from 1 to 11 lines in length. These emails generally required less than a minute to read, but would often take hours to complete the requested action. Of the 1727 emails that were received during the email logging session, 61 percent were from 1 to 11 lines in length. This finding was also supported in the PEO EIS email questionnaire where respondents indicated that 70 percent of the emails received were from 1-11 lines.

In order to analyze the relationship between email length and the time required to complete the action identified in the email, each author identified an email that was short in length but required a significant amount of work to complete. It was determined that the best way to examine the relationship between email length and time to complete was to conduct an email text analysis.

An analysis group, consisting of the five authors of the Joint Applied Project, conducted a two-hour email analysis session. The session was broken into two one-hour segments. The first segment of the analysis session addressed the work involved in completing the action required by a short email. Therefore, the first segment of the findings draws on the analysis discussion and provides a description and explanation of the work generated by the emails. The second segment of the analysis discussion addressed the relationship that appeared to exist between the amount of time an email took to complete the action and the feeling that email is overwhelming. Based on this second segment of the email text analysis, four themes were uncovered that provided insight into why email is perceived as overwhelming. The second segment of the findings address these themes, which included the lack of down-time from email, the existence of multiple tools allowing for easier access to email, the ability to multitask, and the expectation of an immediate response.

1. Email Text Analysis Session – Findings

a. Segment One

For the email text analysis session, each of the Joint Applied Project authors selected an email that they considered "problematic." During the first segment of the email text analysis session, each participant read a short email aloud, from 1-11 lines in length, and discussed how much work was involved to complete the action. Describing the work required included looking at how many hours the related work took to complete, how many people the work involved, and the various locations (e.g. at home, in the office after normal duty hours, on travel, or on vacation) that were involved to complete the action generated by the email.

The emails used were a good representation of a typical email received during the workday. All of the emails used in the first segment were action request emails (coded as "action request" or "status update" in our Primary Purpose of Document Table), where the author and others were required to take some sort of action as a result of the email. Using this type of email is an accurate representative of a typical email received based upon the findings of the email logging session and the PEO EIS questionnaire, where "action request" and "status update" emails were the majority of daily emails received; 38 percent (Table 13) and 89 percent (Table 21) respectively.

Each email was analyzed to determine the purpose of the email, the time it took to read, the work effort required to complete the action, and any hidden complexities within the email. The following is a discussion and illustration of each email under analysis in this session.

The email found in Figure 1 is an action request email that is requesting the recipient to provide several sentences that reflect the organization's position on thin client servers.

From: Name Withheld

Sent: Tuesday, July 26, 2005 9:01AM

To; Linda J. Cook Additional Names Withheld

Cc: Name Withheld

Subject: CIO EB Action Items

Linda, please give me a couple of sentences that capture our position on thin client item below.

Thanks,

Name Withheld

Name Withheld

Assistant Project Manager

Army Small Computer Program (ASCP)

SFAE-PS-EI-SCP, Bldg 283

Fort Monmouth, NJ 07703-5605

Figure 1. Email Example: CIO EB Action Items

The email in Figure 1 took approximately six hours to complete the identified action. In order to satisfy the request, the recipient needed to contact people within the organization, customers, as well as several industry partners. In total, this involved 11 people directly, with an unknown number indirectly. It also required interfacing with people from Korea, and those on vacation and sick leave. This email and the accompanying analysis illustrate how a one-line email may require more work and resources than it first appears.

The purpose of the email found in Figure 2 was to notify personnel of the initial meeting of an Integrated Project Team (IPT) to review an acquisition strategy.

From: Name Withheld

Sent: Wed 7/20/2005 7:59 AM

To; Steven F. Miller; Keitelman, Marian S; Additional Names Withheld

Cc:

Subject: Acquisition of Services IPT for ITES- 2s

An IPT to discuss the proposed Acquisition Strategy for the Army's Information Technology Enterprise Solutions - 2 Services (ITES-2s) will be held on Thursday July 28, 2005 from 1 to 3 PM in Crystal Square 4, Suite 310. (Street Address: 241 South 18th Street, Arlington VA 22202).

This acquisition is valued at approximately $200 billion.

This action falls under the Acquisition of Services portion of DoDI 5000.2. The IPT will review the Army's proposed plan of action as described in the attached Acquisition Plan. I encourage all to review the strategy as soon as possible and provide any issues to the Army POCs - Steven Miller or Marian Keitelman prior to the IPT. This will permit the PM to consider your point and address it appropriately at the IPT.

V/R,

Name Withheld

Oversight Action Officer

OASD (NI1)

703-XXX-XXXX

Figure 2. Email Example: Acquisition of Services IPT

A reader can breeze through the email in Figure 2 in less than a minute and know the date, time, location, and purpose of this scheduled meeting. What is not apparent from the email, however, is that in order to complete all of the necessary actions to prepare for the IPT, it took over 20 hours of work by 11 individuals. These individuals worked from multiple locations during both duty and non-duty hours to gather data, complete briefing charts, and perform other necessary actions to prepare for the meeting. Additionally, several of the email recipients, including Mr. Miller and Ms. Keitelman, had never participated in an IPT for the acquisition of services. In order to understand the requirements, there was a need to perform web research as well as conduct conversations with personnel from the US Air Force and other DoD activities. This email example also illustrates that a short email, on first glance, does not accurately reflect the level of complexity of the actions required.

The email found in Figure 3 is another action request which is short in length requesting the recipient provide a report on cost estimates on software agreements.

From: **Name Withheld, CIO/G6/FCI Contractor**

Sent: **Tuesday, July 19, 2005 12:53 PM**

To: **Wardle, Adelia E PEO EIS APM ASCP**

Cc: **Names Withheld,**

Subject: **Software license cost throughout the Army**

Dee,

LTG Cash, Army Money Office, has asked the general questions about the number and costs (including administrative) of software licenses throughout the Army. I thought that we could summarize the license agreements managed by ASCP, which should provide a good estimate of the principal software expenditures. Can ASCP identify the major enterprise software agreements contracted by the Army and the associated costs estimates over the FYDP (FY05-11)? Please call to discuss. Thanks,

703-XXX-XXX

DSN 222

Figure 3. Email Example: Software license cost throughout the Army #3

No timeframe is identified for the actions to be completed in Figure 3. However, the fact that the request comes from a Senior Army leader, implies that there is a short response time regardless of the urgency of the action required in the email. The recipient of the email stated that this short email took approximately eight hours and required 11 individuals, working from home and office, during duty and non-duty hours, to complete the initial action. The recipient also stated that the completion of this action request resulted in multiple follow-on emails of similar length. These follow-on emails also required similar resources to complete each action. This email is yet another example that illustrates that a single email may generate additional emails that have actions of similar size, scope, and magnitude.

Although clarity was not a reoccurring issue with the previous example emails the email in Figure 4 is a good example of an unclear email. The intent of the message was unclear, so all recipients had to first determine the meaning of the email.

From: **Name Withheld,**

Sent: **Tuesday, July 5, 2005 11:23 AM**

To: **Name Withheld, PM JDITM**

Cc: **Names Withheld,**

Subject: **Cluster V Config by SO 1 System**

Brian,

Let's discuss this tasking, Net Sys Lead. Frank can provide you more background

Name Withheld

From: **Name Withheld**

Sent: **Tuesday, July 5, 2005 10:05AM**

To: **Name Withheld**

Cc: **Names Withheld**

Subject: **Cluster V Config by SO 1 System**

Jon/Russ: Don't forget you guys owe me the coord laydown (Govt, LSI, each Platform Kr) for above subject by Friday. Laydown is config, schedule for development to meet SO1 eval and production testing.

Name Withheld

Figure 4. Email Example: Cluster V Config by SO 1 System

The emails in Figure 4 initially make one scratch their head and say "HUH?" One must first determine the actual meaning of the message. In this case, the recipient of the email had to contact one of the personnel who was carbon copied (CC) on the email to attempt to obtain addition background on the requirements. Because both individuals were not able to get a clear understanding of the requirement, they determined that they had to schedule a meeting with the sender and a host of others to determine what the real requirement in the original email was. To further complicate matters, after the meeting was completed, participants still disagreed on what the actions identified at the meeting were. This disagreement led to a series of emails that attempted to settle the misunderstandings and define the required actions. The end result was that original intent of the email was to develop a decision briefing to present to the General.

According to the recipient, these two short emails spawned numerous virtual meetings (Webex, Video-teleconferencing (VTC), and conference calls) totaling over 40 hours. These meetings required the involvement of over 35 people, from six

government and three contractor organizations in order to complete the necessary actions. This email took approximately 20 days to complete, with five of the 20 days being non-work days (holidays, weekends). Additionally, senior level personnel were involved in the action, which required approximately 41 hours of work for each of these individuals. This email required several additional emails, which individuals had to read and then act on. Had this email been a little clearer, it may have reduced the need for several meetings, and thus may have allowed the recipients to attend to the actual task that much quicker. The overall time spent on this requirement was increased due to the initial interpretations or lack of understanding.

b. Segment Two

Following completion of the first segment of the email text analysis, a second segment was held where the five Joint Applied Project authors conducted an open discussion in an attempt to answer the questions: *Why do you feel that email is ineffective?* and *Why do you feel overwhelmed by email?* A lively one-hour discussion enabled each of the participants to cite their experiences and opinions regarding these questions. Below are extracts from the discussion that support the concept that email is ineffective, inefficient, and causes a sense of being overwhelmed.

Email can be an effective tool, but too often individuals are given the technology without receiving adequate training on how to use it effectively. This can lead to frustration and the feeling of being overwhelmed by the technology.

> The tool itself is overwhelming; it is just given to us and they say "Here, just use it!" We have never been taught Outlook, what we can do with it, how we can use different features.

In this example the participant noted that people were expected to use email, even though they had never received training on email software. This lack of training may account for feelings of overwhelm because there was no preparation for how to deal with the new technology and associated stresses. In addition to lack of training on email, the technology itself can also be a distraction.

The tools that are used to make our lives easier often end up more of a distraction than a supportive tool to us and to others.

> Blackberry is a tool but as a result do people know there is a way to turn it off or silence it? Some of these tools they have given us to make us work better are causing distractions. If we are giving a presentation and there is someone thumbing away on their Blackberry, it is a distraction to the presenter. If [person using Blackberry] is asked a question, they will say "Can you repeat the question, I did not hear you." The reason they did not hear you is because they were distracted by reading an mail on the Blackberry.

In this example, the participant stated that as a tool, the Blackberry wireless email device became more of a distraction than an asset to the user. What was meant to be a time saving device in order to keep the user in touch actually became a distraction.

Email as a technology often causes duplication of effort. An email may have multiple recipients, all of whom may believe that the action belongs to them. Each recipient may end up addressing the issue another recipient is also addressing, resulting in a duplication of effort and confusion.

> I keep hearing because of the medium used you have a lot of balls in the air at the same time. Because the way email is you may take one action on the email and on the same email someone else may take a similar action. We are running around in circles, sometimes duplicating the same work. More work, more effort. Before the days of email this may not have happened because I would have called somebody or sat down and talked to somebody and I don't know if we would have been working in parallel. Do you know what I'm trying to say? It would just be so easy to distribute that email, and then everyone replies and sends the email again. This generates more and more. It doesn't happen when you are on the phone.

This participant was lamenting over the duplication of effort when multiple addressees claim the action as their own. In theory one would think that multiple addressees would ensure that all bases are covered, but in reality you may have

many people working on the same task concurrently without any coordination to their efforts.

Email has caused expectations of instantaneous feedback. Today's society is becoming one that demands instant gratification and email is one of the tools that have allowed this to occur.

> They have given us email as a tool. As a result of email people expect instant gratification. In one case three General officers wanted an immediate response. In another case thirty-five other people expected immediate gratification. That is overwhelming.

> I think people expect you, and I just experienced it this morning, they expect you to be available immediately. I got an email that said, I called Brian and he was out and I got a voicemail so he called our admin so she transferred him to me so I could answer his question. He got my voice mail because I was in a meeting. I get back to my desk and I see this email this guy saying I called Brian, then Lois she transferred me to you and I got your voice mail so I have not spoken to anyone yet. It had only been ½ hour. This is my question. I was in a meeting doing my real project, I'm backing up Brian who was sick, and this guy was frustrated because he couldn't get anyone for ½ hour.

In the two examples cited above, the participants voiced their frustration and appeared overwhelmed because of the expectation that an immediate response to an email was warranted. Employees appear confused over how to prioritize their workload. This inability to prioritize their workload may cause an ineffective use of their workday and has resulted in many employees doing work while at home or on vacation.

The boundary between a professional and personal life has become murky. Where previously work stayed in the office, it has become a trend to take work home and on vacations. Email is one of the primary tools that permit this to occur.

> I don't think we ever have a down time. You can take a down time but you will pay for it later. If you go on vacation you read your email so you won't be behind. I have gotten where I don't

> read my email when I'm on vacation, well maybe I read it less. It is just horrible when I get back. What does all this mean?
>
> Back in the old days when you were in meetings, you were in a meeting and that was it. The most you had was a cell phone. The only ones that had cell phones were the O6 and above. Also when you were on travel, you were on travel. You did not have email where they would reach you when you were on travel.

In these examples, participants expressed their concern that email follows you wherever you go. They indicated that while on business travel or vacation, access to email is readily available, and therefore the office is always within their reach.

A recurring theme that arose during segment two of the email text analysis session was a need to multitask to keep your head above water. Users do not always have the luxury of doing one task at a time because everything needs to be done immediately. Fortunately, technology has developed to the point where multitasking is doable. What is not clear, however, is if this technology has caused a reduction in the quality of the efforts performed. The authors of the Joint Applied Project cited several examples where multitasking occurred and they questioned the quality of their output.

> Even a meeting we are having here and you're tied to the phone, to the Blackberry. You can't just do one thing. This, I believe is why we get overwhelmed. When you have three general officers coming in with a request almost at the same time which one do you take care of first? You don't have to do them all at the same time.
>
> I'm guilty I will have the web-x meeting on and I'm not paying any attention to it. I have a Blackberry, desktop, laptop. I have a meeting this week will I pay attention? No. Because they will have connections for our laptops in the meeting room and I will be doing email along with hundreds of other people. And I'm one of these that will say sorry I did not hear the question because I'm not paying attention I'm doing email during the meeting.
>
> If you are in a meeting and you are half paying attention is the meeting going to be quality or are you going to have to re-address something over and over. You can't be doing things

> in parallel perfect. Something is going to suffer. In the old days when there were no distractions and you were in a meeting and you gave your full attention was the meeting that much more productive. Was the meeting shorter? Did things get done and accomplished and you moved on. As opposed to today we are only half paying attention, half doing this and that. You have to give the time to come back and finish the other half. Your emails are probably not the same quality when your doing them and talking on the phone at the same time. Probably not. Something has got to give. Are you getting twice the work done? Probably not.

The three examples above represent a noble effort by these individuals to respond to several emails during a meeting so that they might be able to stay on top of the emails they received during the day. However, in reality this type of multitasking may be ineffective and actually reduce productivity. For example, an individual that is in a meeting and working on their email, must either split their attention between the two efforts or be fully engaged in one of the two efforts. An individual can not be fully engaged in both, so, something has to suffer. In the case where their attention is split, neither effort receives full focus, nor will either effort be totally neglected.

2. Email Text Analysis Session – Thematic Analysis

From the email text analysis session, a thematic analysis found that four themes emerged relating to why participants perceive email as causing the feeling of being overwhelmed:

- No down time
- Technology allows for easier access to email
- Email results in multitasking
- Senders of email expect an immediate response

a. *No Down Time*

One of the themes that emerged in the analysis was that although email is an enabler, it has an impact on our personal lives. The need to stay on top of things in the

office or to get a jump on tomorrow's work has led to email lengthening our work day. Email has become central to our work lives, but has also had an impact on our personal lives. Many users find that they can no longer take evenings or weekends off from checking email, for fear of not being able to overcome the backlog of email. From the PEO EIS email questionnaire, 82 percent of respondents indicated that they spend up to two hours of non-duty hours per day on work related email. This is consistent with findings in our literature research. In *Managing Your Email*, Cavanaugh found that the prominence of email has lengthened the work day (Cavanaugh, 2003). In the *HP Guide to Avoiding Info-Mania*, Dr. Glenn Wilson found that in the United Kingdom, "62 percent of adults are addicted to checking messages during meetings, after office hours, evenings and weekends" (Wilson, 2005).

One of the participants in the email text analysis session stated that she "*didn't think we ever had down time,*" and that "*even on vacation you read your email so you won't be behind.*" Another participant added that while they were on leave they received an email from their boss and acted on it even though they were not in the office. During the authors' interviews with leading IT providers, several participants admitted to answering emails at all hours of the day. One interviewee stated "You absolutely feel overwhelmed by email; it effects your quality of life. While it makes you more productive, it is a double-edged sword. You are more efficient for having it, but will at times find yourself using email at 2:00 am. If you are an order entry clerk, you can have a 9 - 5 day. But if you are getting an email where someone needs an answer right away, you need to be able to ensure that the right people are online." As one can see from these quotes, email is always within reach and enables us to be in touch at all hours from any location and therefore may intrude on their personal lives and lead to the feeling of being overwhelmed.

One particular string of emails illustrated the above statement. In an email between the APM, ASCP and three of the authors (Linda Cook, Marian Keitelman, and Steve Miller), there was a request to provide PEO EIS headquarters with sales information on thin client servers. This email had a very short turn-around time. At the time of this email, Marian Keitelman was out on extended sick leave and Steve Miller

was out of the office on vacation. However, the APM needed an answer right away and had to reach out to the individuals who could provide her with the information she needed. Ms. Keitelman checked and answered email while recovering from surgery. Mr. Miller, much to the chagrin of his family, was checking and answering email while on vacation at the beach. Both individuals provided the necessary feedback that their boss required, but what was the impact on Ms. Keitelman's recovery period or Mr. Miller's family life?

The above sample emails are all good examples of how our reliance and concern over email has the potential of decreasing our quality of life. While spending several hours each evening at home doing work related email may seem harmless, there are many people who would say that our need to stay on top of our work email has become an addiction. Users are having a difficult time in maintaining the barriers between work and home. Email is one of the leading causes of work-related stress (Seeley & Hargreaves, 2003), but what is not known is the impact it has had on the quality of family life, and on the stress to our families. One of the key reasons for this perspective and thus leads to the sense of overwhelm, is that there is no down time due to the advancements in technology that allow for easier access to email.

b. Technology Allows for Easier Access to Email

As technology has continued to advance at a rapid pace, the numbers of tools that have been created to allow us to stay connected to our office and our email has dramatically increased. The introduction of tools such as the Blackberry wireless email device, cellular phones with internet access, cable internet access, web mail, and virtual private networks (VPN) have created an "always-on" society. Email can now follow us 24 hours a day. As a result, many of us feel compelled to answer an email as soon as it is received, even if it is during non-duty hours. Since there are so many tools that allow individuals to receive and respond to emails anytime and anywhere, one may wonder if management assumes that they should be answering emails as quickly as possible, to include non-duty hours. Perhaps the culture has changed so that this is now becoming the accepted norm.

Many of the leading IT providers interviewed use Blackberry wireless email devices, notebooks with wireless internet access, and other ways to constantly remain in touch with their office. One of the industry interviewees stated that they felt that their company "frowns on those who turn off their instant messaging software or don't respond to the latest email." They continued on to say those co-workers will "*look at you with contempt or disgust if you shift away from the technology*." Another interviewee discussed that these "always on" devices required them to set priorities in their life. He stated "*You have to know when to turn the Blackberry off or when to walk away from the notebook. Of course, this is based on individual preferences and personalities.*"

In addition to having the ability to access email from anywhere, these tools also create potential distractions in meetings, a sense of being overwhelmed, and being constantly in touch. One comment during the text analysis session may best represent the above statement, "*Because they will have connections for our laptops in the meeting room I will be doing email and end up being one of those individuals that will ask questions to be repeated because of the distraction of the email*." The participant stated that he routinely does this to stay on top of his email workload, but understands that his actions impact the rest of the meeting participants. In fact, during the email text analysis session, one of the participant's Blackberry devices began to vibrate, signaling that they had received a new message. This person then began to type away while other participants laughed at the coincidence of this occurrence. This example illustrates that not only can one access email anytime, anyplace, or anywhere but also that the technology facilitates the ability to multitask in new ways, which again may lead to the sense of being overwhelmed.

c. Email Results in Multitasking

Another theme that arose as a result of the email text analysis session is that the increase in email has led to an increase in multitasking. For the purpose of this Joint Applied Project, two forms of multitasking will be considered. The first form of multitasking is where one is doing email while doing something else, such as talking on

the phone or attending a meeting. The second form of multitasking is where one receives multiple emails with actions that have the same level of priority. This may cause a conflict as to which task needs to be completed first.

Because so many emails are received during the workday, many people try to keep on top of their email while on the phone or attending a meeting. As one of the authors of the Joint Applied Project stated during the email text analysis, "*I've done that, talking to someone on the phone while at the same time answering an email.*" This is an example of the first form of multitasking where one is working on email while doing something else.

During the email text analysis session, one of the participants lamented for a return of the days when email related multitasking was not a common occurrence. They stated that "*Back in the old days when you were in meetings there were no distractions and you gave the meeting your full attention, now you are half paying attention due to reading email during the meeting*."

The second area of multitasking discussed focused on multiple emails with actions that have the same level of priority. The authors found during the email log process that up to 38 emails are received per day that may require some type of action. These responses are sometimes expected to be provided immediately. Participants illustrated the need for an immediate response by stating, "*I think people expect you to be available immediately*" and "*We have a lot of work to do and it is immediate*." During the email text analysis session, one of the participants stated, "*When you have three general officers coming in with a request almost at the same time, which one do you take care of first? You can't do them all at the same time*." The large number of emails received, and the expectation of an immediate response is enough to overwhelm someone and give them a sense of "always being behind."

d. Senders of Email Expect an Immediate Response

A final theme that arose during the email text analysis session was that senders of email typically expect an immediate response. It is almost as if senders

perceive that the recipients are sitting at their desks, have email open at all times, and respond to every email as it is received. As Sarbaugh-Thompson &Feldman (1998) states, "Email is an expeditious means of communicating to an almost unlimited number of people, which is in contrast to traditional mail. Additionally, Girrier (2003) suggests that "Email has revolutionized communications by accelerating interpersonal communications and enhancing collaborative planning." These two statements together indicate that users are allowing email to drive their communication and work habits. As one of the respondents to the PEO EIS email questionnaire eloquently stated, "*Anyone with access to the email believes it is their right to send an email and expect a complete timely reply regardless of the subject.*"

Customer-oriented organizations, such as PEO EIS, might tend to support the efforts of those who attempt to respond instantaneously to emails, but reality is that responding immediately may cause distractions and half-completed actions. Although the email logging session did not capture the time an email received versus the time it was opened, discussions and questionnaire responses indicated that this was a common practice. One respondent to the PEO EIS questionnaire indicated that "*At times, people want responses immediately. This becomes an issue when you are working on other tasks and need to stop and answer an email."* Another respondent indicated, "*Can be an interruption. Can be a distraction. Can leave me feeling fragmented.*"

In summary, the participants in the email text analysis session discussed their thoughts on the ineffectiveness of email and the resultant feeling of being overwhelmed. From this discussion the four themes discussed above emerged as being factors leading to the feeling that email is overwhelming.

E. CHAPTER SUMMARY

This chapter evaluated the findings of email collection log, questionnaire, and thematic analysis sessions. The email collection phase identified trends and areas of common concern regarding the ineffectiveness, inefficiency, and the feeling of being overwhelmed. This phase produced the first indication that clarity was not the major

issue but rather that the volume of email, the expectation for an immediate response to email, the ability to always be in touch resulting in no down-time, duplication of email responses, and technology advances that allow for multi-tasking were the factors leading to the feeling of being overwhelmed. The focus group and questionnaire phase further gathered information that supported and elaborated on the findings from the email collection phase. At the conclusion of these two phases, the preponderance of data further supported that clarity was not the major issue causing a feeling of being overwhelmed. Based on the email text analysis session, four themes were uncovered that provided additional insight into why email is perceived as overwhelming. These themes included the lack of down-time from email, the existence of multiple tools allowing for easier access to email, the ability to multitask, and the expectation of an immediate response.

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

In this chapter, findings of this Joint Applied Project are summarized, followed by recommendations on improving the use of email within Army Program Management organizations. The chapter concludes with recommendations for further research on this topic.

B. SUMMARY AND CONCLUSIONS

The objectives of the Joint Applied Project and the research questions are reviewed, followed by a synopsis of the literature review. The findings from the email log session, PEO EIS Questionnaire, and the email text analysis are recounted. Finally, recommendations are offered.

1. Research Questions

The approach to the Joint Applied Project research was intended to answer the primary question: Are you managing email - or is email managing you? The following secondary questions were also addressed: (1) How much of the workday is spent on email? What is the volume of email received? Does email contribute to a feeling of being overwhelmed? What factors contribute to feeling overwhelmed by email? (2) What are the purposes of emails that are typically exchanged within Army Project Management Offices? (3) How effective is email within Army Project Management Offices as measured by: understanding the purpose, action, and the time it takes to complete the action? (4) What does communication theory and research offer for improving the perceived clarity, effectiveness and efficiency of email while reducing the feeling of being overwhelmed? (5) What recommendations can this project offer for improving email communication within Army Project Management Offices?

The secondary questions were answered by examining the pertinent literature, interviewing leading IT providers performing an email logging session, leading a focus group, executing an email questionnaire, and conducting an email text analysis session.

2. Synopsis of Literature Review and Industry Interviews

There is a wealth of information published on the subject of electronic mail and it continues to grow as our professional and personal lives continue to increasingly depend on email. Our literature review suggests that email is an enabler, a vital tool for a successful professional subsistence, and it has become the primary means of communication throughout the modern world. Email allows for communication without geographic or temporal bounds. However it is this very enabling nature, and the ease and economy with which the user can apply it, that result in the promulgation of email overload.

Email is a powerful tool and enabler, but it must be harnessed and applied properly. As users, there is a need to understand when to use it, when not to use it, and how to best handle the traffic received. Email is not a substitute for face-to-face communications; it is instead a valuable and dynamic tool that can be used to augment daily communications. A number of sources were found that offer email best practices to help the user work with and manage electronic mail, but there is little hard policy other than those relating to security, privacy, and ethics.

Through the interviews with leading IT providers, it was found that even some companies appear to lack such policy and training in email best practices. The issues they identified with respect to increasing email usage, particularly as it applies to expending company and personal resources, complemented the literary research. One IT provider cited an exorbitant volume of email sitting on employee hard drives, and all those interviewed expressed concern over the increasing amount of time, both in and out of the office, spent managing email.

3. Findings

The findings demonstrate the importance of using various methods to gather data in order to sufficiently address the research questions. The information learned during the literature review substantiated results from the email logging session, focus group,

and questionnaires. In addition, interviews with industry supported the findings. From all of these sources recurring themes began to emerge.

At the outset the authors began their research with the assumption that the clarity of email was one of the major reasons causing the feeling that email was ineffective and inefficient means of communication. As the research project progressed, it became clear that clarity was not a major factor causing a feeling of being overwhelmed by email. Rather, it was found that volume of email, the expectation for an immediate response to email, the ability to always be in touch resulting in no down-time, duplication of email responses, and technology advances that allow for multi-tasking were the factors leading to the feeling of being overwhelmed. Of these factors, three predominant themes emerged as leading to the feeling of being overwhelmed; volume of email, expectation for an immediate response, and ability to always be in touch.

a. Volume of Email

It first became apparent that a significant volume of email is received on a daily basis by the week-long email log session. This session showed that the authors receive approximately 69 emails per day. Half of the focus group participants indicated that they receive between 76-100 emails per day. The PEO EIS questionnaire indicated that 40% of the respondents receive between 26-50 emails each day.

In addition to the volume of emails received, it is important to note that the time and effort required to complete the action identified in the email is a factor leading to the feeling of being overwhelmed. This became apparent after analyzing the results of all the data collected during this Joint Applied Project.

b. Expectation for an Immediate Response

An examination of literature indicated that users allow email to drive communication and work habits (Sarbaugh-Thompson & Feldman, 1998; Girrier, 2003). The PEO EIS questionnaire indicated there is an unspoken expectation that email is read quickly, and a response (if required) will be expeditiously forthcoming. This is illustrated by one respondent who commented, "*At times, people want responses immediately. This becomes an issue when you are working on other tasks and need to*

stop to answer an email." During the email text analysis session, several of the participants also endorsed this premise by elaborating on their individual experiences.

c. Ability to Always be inTtouch

During the email text analysis session, it was found that the introduction of new tools and the advancements of technology have enabled individuals to stay connected to the office and email. Email can now follow users 24 hours day, thus leading to a feeling that a response is required since it is so easy to access. 33% of respondents to the PEO EIS questionnaire indicated that they spend between 1-2 hours of non-duty time answering email. During the text analysis session, several participants indicated that the general consensus is that email tools, such as email notification pop-ups, can be very distracting when attempting to complete a task. However many users are reluctant to disable this feature since it enables them to continuously monitor email and facilitates immediate recognition of vital, time-sensitive communications.

Interviews with leading IT providers support this finding by expressing that they were overwhelmed by email, often spending evenings and weekends reading it, just to keep up. The existence of email and the ease of access means they are never out of reach with customers and co-workers around the globe.

C. RECOMMENDATIONS

The purpose of this Joint Applied Project was to explore how email is devised, written, and used among personnel within PMOs. Throughout this study, common themes evolved that lead to the following recommendations on improving the clarity, efficiency, and effectiveness of email, thus reducing the feeling of being overwhelmed.

Research indicates that the use of email as a means of business communications has increased over the past decade and will likely continue to increase at an astounding rate. It was also found that corporate regulations exist for most security-related elements, however the establishment of policies to regulate best practices and to minimize the information overload, and subsequently the amount of time employees need to spend on

managing their email, has not caught up. It is time for the business world to set such policies (Sherwood, 2001).

Findings suggested that there is a lack of training on the efficient use of email. To better use email, the development and implementation of training programs to guide employees on email etiquette, proper email composition to include bottom-line writing, use of email tools, and effective email management are necessary.

Training programs that address email etiquette may teach personnel how to use email judiciously, and that it is acceptable to pick up a telephone if your message becomes longer than what one message window can display, or if the message contents becomes too complicated. There is an appropriate place and time for using mobile email devices, such as the Blackberry. By educating and reminding users as to the distractive nature of these devices, they may think twice about using them during meetings or while in public places such as the theater, or in restaurants.

There is concern that the increased dependency on email may result in a decrease in the ability to properly communicate. Where in the past, any written correspondence followed formal formats, today it us perfectly acceptable to send an email that is informal and contains slang, abbreviations, and emoticons. Additionally, these same messages may contain legal and contractual terms and conditions. Without using techniques such as bottom line writing, or providing clear and concise verbiage, messages may very well be misconstrued or misunderstood, which may result in the wrong actions being taken, or lead to legal liabilities.

Email tools may help to organize an inbox, thus reducing the feeling of being overwhelmed by the sheer volume of messages. Filters, folders, and flags are examples of such tools that are contained in most commercial email products. Understanding and applying these tools effectively may help organize email for novice users. Typically, email products are fielded without any training or introduction to the tools embedded in the product. Users normally do not have the luxury of time to read documentation or help files. Establishing user groups or providing cheat sheets that simplify the use of the product may increase the use of these effective tools.

Suggested rules and guides have emerged that can provide a solid basis for such policies and training, but no universal practices exist. This is no easy task. Mackiewicz (2003) performed a study sponsored by the University of Minnesota, on eleven email handbooks and the differences in the ways they treated eight commonly referenced email rules. These rules include use of subject lines, length of emails, and use of emoticons. Mackiewicz found areas of both consensus and disparity among the handbooks; in many cases differing based on the objective of the message and intended audience. She concluded that conventions in a number of areas are still emerging (Mackiewicz, 2003). Accordingly, one would expect that the conversion of "best practices" into a universal email policy to be challenging.

To summarize, there is no single answer to managing email effectively and efficiently. It is largely based on personal preference. While some users may organize their messages into files according to subject, others may do so based on sender. While there is no right or wrong technique, the point is to arm users with options, and let them select a strategy that works best for them. Education, training, and the establishment of users groups that leverage best practices will provide users with the knowledge and power to implement their own email management techniques.

D. SUGGESTIONS FOR FURTHER RESEARCH

As with most research, the findings can lead to a need for further research and investigation. The authors of this Joint Applied Project offer several suggestions for further research.

A single Army organization served as the basis of this Joint Applied Project. To further expand on, or confirm the findings, it is suggested that this study be duplicated with other DoD and corporate organizations with a wider scope of employees.

Absent in this study is an analysis of how email is managed and processed. There may be a correlation between feelings of being overwhelmed with an individual's ability to manage their own email. Additional research may indicate if this correlation in fact exists.

This Joint Applied Project examined the effectiveness, efficiency of email, and the sense of feeling overwhelmed. What it did not address is the impact the technology has on the health of users. Further research may be done relating email usage to health, such as carpal tunnel/thumbal syndrome, eye strain, and work-related stress.

Additionally, this study touched upon, but did not quantify the impact of email creeping into personal lives, and stealing time from family and friends. Further research into this area would be justified.

Cultural and social changes may need to be explored in more depth. Culture has evolved to expect instant gratification. As a result, users may expect immediate email responses, thus leading to email addiction. This potential correlation may warrant areas for further study. Additional changes identified in this study include changing social and professional bonding, the development of trust among co-workers in a virtual team, and impacts on writing styles and skills. Has the cultural and social environment changed email, or has email changed it?

The study touched upon email as being both an enabler and disabler. It is a tool that has the potential to increase efficiency, yet in the end, it may create more work, thus leading to a sense of being overwhelmed. Additional research is recommended in quantifying if email has helped or hindered productivity.

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APPENDIX A. QUESTIONNAIRE

1. Which best describes your position?
    - Management
    - Action Officer
    - Technical
    - Administrative
2. How many emails do you receive each day?
    - 1-25
    - 26-50
    - 51-75
    - 76-100
    - 101-125
    - 126-150
    - > 150
3. How much of your workday do you spend on email each day?
    - < 1 hour
    - 1 - 3 hours
    - 3 - 5 hours
    - > 5 hours
4. How much of your NON duty hours do you spend on work-related email each day?
    - None
    - < 1 hour
    - 1 - 2 hours
    - > 2 hours
5. How often do you feel overwhelmed by email?
    - Often
    - Occasionally
    - Never

6. Why do you think you're overwhelmed?

7. What are the purposes of emails that are typically exchanged each day? Select the top

- Action Request
- Status Update
- Reminder
- Information Response
- Scheduling Request
- Scheduling Response
- Social Content
- Bulk Email
- FYI
- Duplicate Message
- Huh?? (No clue as to purpose)

8. What is the usual length of an email message?

- 1 - 4 lines
- 5 - 10 lines
- > 11 lines

9. What percentage of email contains attachments, links, or has been forwarded multiple times?

- < 10%
- 11 - 25%
- 26 - 50%
- > 51%

10. On an average day, what percentage of email must you re-read to understand the purpose/action required?

- < 10%
- 11 - 25%
- 26 - 50%
- > 51%

11. How long does it usually take to understand the purpose or requested action in an email message? • < 1 minute • 1 minute • 2 - 5 minutes • 6 - 10 minutes • > 10 minutes
12. For unclear email messages, which of the following actions do you take to get clarification? Rank from highest (1) to lowest (4). • Re-read the email message • Email back to request clarification • Telephone the sender • Walk over to the sender's desk
13. Which of the following factors help you determine the intent and/or action required in an email? Choose the 3 most frequently used. • Your location on address line (To, CC, BCC) • Subject Line • Content • Organization of message • Word Choice • Tone
14. Do you use any of the following email tools? Choose the 3 most frequently used. • Filters • Folders • Out of Office • Calendar • Flags • Search • Other
15. Are most of your emails internal or external to the PEO? • Internal • External

16. Who is the majority of your email from? (Rank in order from most (1) to least (5). • Superiors • Peers • Subordinates • Vendors • Other
17. Within PEO EIS, do you use email to communicate instead of face-to-face communication? • Never • Sometimes • Frequently • Always
18. Within your office (APM, PM), what is the primary method of communication? • face-to-face • phone • email
19. When communicating outside of the office, what is the primary method of communication? • face-to-face • phone • email • VTC
20. How does email help you do your job?
21. How does email hinder you job performance?
22. What is your biggest pet peeve regarding email?
23. What might be done to improve the use of email in PEO EIS?
24. Is there anything else you would like to tell us about email usage?

APPENDIX B. RESPONSES TO QUESTION SIX

6. Why do you think you're overwhelmed?

#	Response
1	After leave days off, the attempt to catch up on hard copy mail & e-mail overwhelms.
2	Causes interruption in work load.
3	Actions are complicated and require extensive coordination, so one e-mail can generate many hours of work. Multiply that by several dozen e-mails per day, and insufficient resources (staff, money) to adequately work the actions.
4	Input is received faster than can be reacted to.
5	Short suspense for deadlines--certainly not an e-mail issue. Down time
6	not enough time to respond
7	Don't feel that I am overwhelmed just a matter of keeping up with the mail.
8	Recipients often expect response upon receipt. Given volume received, that is difficult.
9	I have a habit of reading everything I receive, or at least skimming. Also, keeping up with a good filing system is a challenge.
10	Too many emails copied to me, when I don't really need to see them.
11	I don't fell overwhelmed on a daily basis.
12	Too many opinions in email and not enough fact.
13	If there is an overload of email to read/answer I feel I may overlook some that require a response.
14	e-mail is the most convenient way for individuals to pass along taskings, ask a multitude of questions, make inquiries, etc. If these things had to be handled by an actual phone call or written correspondence, I would venture to say 50% of these would be eliminated.
15	Uncoordinated actions
16	almost everyone wants immediate or near immediate responses. said responses do not allow for research time.
17	Volume
18	Usually after coming back from an extended absence (leave) and did not have a chance to check email before coming back to work.
19	Too much chatter about nothing. Pick up the phone.
20	Distributing repetitious info to multiple individual requests from action officers around the world, instead of having their MACOM reps distributing the correct info.
21	I am not able to focus on running the organization for answering email. The expectation of answering email the same day.
22	E-mails are often data calls requiring research.
23	I receive Simple email with multiple attachments (218 page document) requiring SME review and responses. Unexpected multiple briefing updates, Data calls and surveys that appear with very short suspenses. These do not necessarily go through channels but never seem to be questioned by the chain of command. Contractor generated requests for project data to support their participation in activity not supporting any of my projects yet consuming a part of the limited time I have to devote to email management. Any and all personnel that were associated with the department of defense appears to be able to have their own AKO account and are entitled to send email notes requesting comments and believe we must respond.
24	Too much - high volume. Many emails require further action.
25	50 priorities, all number one, and all due yesterday.
26	Continuous forwarding of non-essential e-mail and too many addressees who seem to think since they were on the e-mail they need to comment, even though in many cases they should not have.
27	Frustrated w/ SPAM
28	Too much "junk" e-mail (i.e., ads, CF copies of irrelevant correspondence; forwarded copies of correspondence I am already on distribution for)
29	Too much info forwarded that does not concern me
30	high volume, immediate response is usually expected. Interrupts your work schedule/plan for the day.
31	Concurrent messages with action items
32	Too many duplicate emails or responses confuse the reader.

33	Too many emails, too little time. :o)
34	Sometimes it is very difficult to get to all of the email - i.e. to stay caught up with it - due to meetings, phone calls, leave, etc.
35	Do not feel overwhelmed. E-mail is how we communicate and share information with those around the military community.
36	Relevant email vs. non-relevant to my lane of action. In addition, some junk or spam type email.
37	Because I have to review it to determine what is important to respond and/or save.
38	Most e-mail directed to me require some type of action or response. Sometimes I can't do "desk" work because I'm responding to e-mail. Also, I get a lot of duplicate e-mail from secretarial staff.
39	If on vacation tend to get behind.
40	Too many emails to "sort through" to determine which are really important
41	More email traffic to answer and not enough time to answer.
42	Multiple emails on the same topic need to be analyzed. This takes time and can be overwhelming depending on the complexity of the subject matter.
43	It just seems like a never ending job just to read them, then you have to act on them in one way or another. Even if it is to decide whether to keep it or file it and then which file to put it in!
44	NA
45	Not enough time to answer all the emails I receive each day, and get the rest of my job complete
46	N/A
47	only about 5%of it pertains to me. most of them are correspondence meant for other people and the sender cc's everyone OR uses a group address instead of an individual address
48	I have too many email boxes to monitor.
49	too many people on CC: line invites additional responses, ratcheting up the total number of emails per day.
50	Tasks assigned as results of e-mail!
51	Volume and request for detail
52	the need to be "professional" and be careful of TONE when writing emails.
53	too many emails and not enough time to respond.
54	Too much of it is junk or redundant (already sent by someone else).
55	Sometime they are all work and not spam that can be deleted. Many time folks "reply all" when only a few need to see the response.
56	1. Spam 2. Junk email 3. Un-solicited vendor email 4. email is used for wrong purpose. i.e. simple phone call would suffice, or worse yet, visit the person sitting next to you to ask the question vice emailing them.
57	Most of the e-mails require e-mail responses, regardless of how trivial. Responding takes time. Many of the issues could be resolved via a phone call which would provide more information and take less time.
58	A lot of data to digest and file.
59	Large volume of mail, most of which require action. additionally, they cover a huge area of functionality, command levels, and differing organizations
60	redundancy detailed dialog
61	Amount of e-mails
62	email has become the "preferred" method of communication. If you do not stay "on top" of it you stand a good chance of missing a tasker or piece of important information.
63	Have to at least glance at each one, but most don't apply because some are responses caused by folks hitting reply all or sending an email saying they got my email, etc
64	Most work days I can hardly get through all of the email delivered to me. When I am out of the office for one day the result is most emails are unread due to the first statement.
65	There is so much information to be digested/processed/answered.
66	lack of time
67	because the system is non-functional so often that you have to do everything more than once (mailbox too full, attachment too large, network unavailable etc.)
68	Can't keep up with the email volume and pending actions important for mission success.
69	Too much volume to spend quality time.
70	Volume base on responses required.

71	Poor planning on others
72	Sometimes overwhelmed by action item emails that come all at once.
73	Occasionally there are too many emails requiring several actions with short notices
74	More traffic than one can answer in a day often takes more than one day to answer emails and respond
75	After a week vacation
76	Too many people send email to people that do not really need to see them. Having to weed through them wastes a lot of time. People need to be trained on proper email use. CCing everybody and their brother is not necessary.
77	too much junk mail which is sometimes difficult to define without opening.
78	Some of the emails would not even need to be sent if people would just think or put a little bit more effort into obtaining the answer.
79	The ones with action items are typically not a part of a planned day's activities. Often they require complex research and responses.
80	So many e-mails. Each must be opened, read, then either answered, marked for further consideration, deleted, or appropriately filed. This takes a significant amount of time especially if there are attachments.
81	When I've been out for a couple of days, catching up is time consuming.
82	Why am I getting all of this crap?
83	I don't
84	Only when I come off of leave and have a large inbox.
85	Not enough hours in the day to answer all email and do other work.
86	All emails coming in are not the same yet time is spent ruling out Junk email, emails on low level admin stuff like MWR activities, and more importantly the email server at my site stinks
87	Never know what to save and what to delete. I respond to questions immediately but my box gets full all the time and I get the messages from Helpdesk
88	Lack of netiquette by others
89	volume of info emails
90	Too many emails which need time to be read and/or answered. Does not leave time to do work and causes a lot of time to be spent getting work done after hours or on weekends.
91	Very difficult and challenging subjects require research and rereading e-mails to gain full understanding.

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APPENDIX C. RESPONSES TO QUESTION TWENTY

20. How does email help you do your job?

#	Response
1	Clarifies requests & confirms scheduling.
2	Quick answers and follow up
3	It is quick in duration; it allows me to multi-task; it creates a history of past actions/conversations.
4	establishes audit trail and provide a means of keeping up with what was said
5	Paper trail on actions.
6	Allows documentation of actions and suspense's. Lessens the pain of telephone tag.
7	provides paper trail
8	Helps to obtain responses when you are unable to meet face-to-face or cannot contact by telephone.
9	Email allows simultaneous notice to ALCON, saving time. It is also faster than paper response and eliminates wasted time on phone calls that drift into other subjects.
10	It keeps a record of what I have done.
11	Persistent documentation
12	saves time from telephone calls - which usually go longer than necessary
13	Information sharing, scheduling meetings, record keeping
14	Receive information and update travelers to any changes.
15	Faster reaction time to an issue or receiving information
16	yes
17	You can quickly send a note, track delivery/read of that note and you can reach multiple people at one time.
18	It takes less time for me to send an email than it does to go to the next building or across my building to talk to some one.
19	passes information quickly and to a large audience
20	1. Document Requirements 2. Respond to requests 3. Provide analysis 4. Provide product 5. Coordinate Actions
21	Allows me to quickly request status and task someone. It also allows me to update superiors without getting on their calendar.
22	Organize thoughts; provide record of communication; reach people not at desks; save time
23	With remote capability, allows communication in route when traveling and during meetings. Also allows quick response to superiors when details are required that can't be phoned.
24	Slowly
25	Coordinate the development and distribution of strategies, plans, briefings, hardware acquisition etc.
26	Communication
27	It keeps a record of what was said and done
28	Very quick way of requesting/providing information without having to personally be in contact during the exchange.
29	Documents information - able to go back and refer to information later on.
30	Provides backup information with the subject that cannot be done by phone.
31	Saves time and provides a paper of trail for actions.
32	Reduces face to face meetings for simple brief needs
33	1. Facilitates communication with people in different time zones 2. Enables quick response to requests for information 3. Maximizes efficiency - can communicate w/multiple people simultaneously
34	Can more efficiently understand the purpose of an action - takes less time then a meeting to get necessary information
35	Gives me back-up documentation
36	Email provides an audit trail. Allows for communication with those in other time zones.
37	efficiency

38	Allows me to contact people who are long distances away
39	Permits an official response to reach a target audience more rapidly than relying on snail mail.
40	Sometimes email helps get information faster.
41	Email helps in the communication process
42	You're able to get the word/tasker/action out immediately vs. not reaching people by phone...and there's a written record w/dates.
43	Helps establish aliases for groups, schedules time, and records information and communication
44	Document actions, file important responses, allows for tracking.
45	Coordination, Document Staffing, Meetings, Reviews, commo w/SME, Research, Contracts, Logistics, etc.
46	It can save time, in some instances. I can also keep records of conversation (i.e. paper trail)
47	Lets you send information to a lot people quickly rather than trying to call everyone.
48	Helps coordinate actions and share information despite time / distance differences.
49	Allows clear and definitive responses, guidance, and direction
50	Attachments are so much better than waiting for mail or distribution. This is the best part of email.
51	It is how I get requests from vendors and information about wages and where people are at any given time.
52	To help me set priorities.
53	The fastest way to request or send information instead of a phone call
54	provide reports and receive updates from outside areas
55	When my supervisor/boss is out of the office for any reason, she is able to communicate via blackberry as to what she needs done. I am able to set up phone bridges, and schedule meetings and send out invitations to those to be included in scheduled meetings. I can store emails in a folder for future references etc.
56	Its an efficient way to update and record taskers.
57	I am remote to the rest of the PM staff, so email is my primary means of communication.
58	essential for communicating with worldwide customer locations.
59	provides the ability to send work products quickly.
60	Communication is faster!
61	Allows you to communicate with others immediately, even if they are not available at that moment to begin the conversation.
62	Email puts requests in writing so that you can keep track of when actions take place and see what the specific requirements were
63	It helps me distribute action items or information to a group of people all at once.
64	Taskers are received via email.
65	Can stay in constant touch with many folks - especially the blackberry. No need to use a laptop while away - can check anytime
66	Provided good record of actions/events
67	It allows me to write thought out messages when I'm unsure if the other individual is in the office or not.
68	Provides record copy and gets to the person in a timely fashion.
69	A large majority of my job performance involves email
70	instant comm, provides immediate record, easy to mass inform the workforce or groups
71	fast communication resulting in prompt action
72	Quick and efficient method of responding to the mail. Avoids hard copy letters.
73	It's quick, easy and you can reach out and touch a multitude of individuals all at once.
74	quick dissemination of info, keeps records/reminders, allows answers/status/updates/etc to be cut and pasted to formal documents/responses
75	Provides a way to communicate information in a documented form.
76	Able to communicate information to a large disparate group of people quickly.
77	Helps me communicate with people not at my location. Also, it helps me keep a record of my taskings to subordinates.
78	helps document tasking and decisions
79	provides a channel for communication in my work space

80	transfer of information, record-keeping, mission/duty clarification, prioritizing
81	I can communicate more quickly using email. It helps me disseminate information needed by others without having to verbally translate repeated times.
82	Enable rapid communication of requirements and actions.
83	Passing of information.
84	It keeps me informed on actions in house and up-to-date information on vendors' products
85	Saves me time overall. Least intrusive form of communication.
86	When I'm sending out information e-mail allows me to ensure that all the recipients get the same information at the same time. When I'm receiving information, e-mail allows me to develop a thorough response rather than a knee-jerk reaction.
87	Helps me track suspenses
88	Dissemination of information related to organization.
89	Keeps me in touch with what is going on in an efficient manner
90	It helps with communicating with multiple individuals at once. Relaying information back and forth.
91	yes
92	Have documentation of actions taken
93	do not have to stop and wait for someone to answer the phone. Do not have to hope that someone is at the their desk when you get there. Much simpler to email and then wait for the convenience of the sender to receive a response.
94	speedier
95	Email helps because it can be used as documentation when creating a paper trail for an action.
96	Consolidates all emails so I can address the more urgent ones first
97	Passage of information, Storage of responses to queries, tracking actions
98	Able to send messages to multiple people at the same time. Can respond to a request in a matter of minutes. Can assign level of importance to a request so receiver has an idea of the urgency. Able to work on requests without constant interruptions from a ringing phone.
99	It lets me communicate quickly with people all over the world.
100	Usually provides a speedy response.
101	Organize taskings
102	Saves time running around or preparing formal correspondence. Linkages to websites and email addresses.
103	Cuts down on travel.
104	allows coordination with a audit trail
105	It allows me to organize my time - answer employees questions and provide managers with different reports, etc.
106	I facilitates keeping people informed of what is happening and encourages their input.
107	Keep priorities better organized
108	keep me informed
109	Helps me have a record of actions and responses.
110	Allows communications with people in other areas of the country. Organizes information. Stores information. Allows immediate response. Makes communications more efficient.
111	maintains a record

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APPENDIX D. RESPONSES TO QUESTION TWENTY-ONE

21. How does email hinder your job performance?

#	Response
1	Too much junk mail received daily that is not filtered.
2	Interruption.
3	Too easy for others to use also!
4	i don't think it does
5	When it is down and responses are expected by e-mail. Unreasonable suspenses.
6	time constraints may not allow for email
7	I don't feel e-mail hinders my job performance, but that it enhances and allows you to be multi-functional.
8	Bulk email wastes time, as does repetitive sending of same message. Also, some individuals assume that once an email has been sent, the recipient has read it. Meetings, suspenses, etc. are often missed because the intended recipient has not read the mail in time.
9	It wastes my time, because I receive too much email that is: not concise, unrelated to my performance, not accurate to the facts or out-dated, etc.
10	Too many FYIs.
11	Limits on file sizes and types that can be transmitted or received.
12	Doesn't really.
13	Takes a lot of time out of the day to read review and take action.
14	I don't believe it hinders, I believe it can become daunting after you've been away from your desk for several days.
15	Having to go through the email and clean out all the junk mail.
16	time consumer e-mail makes it extremely easy to individuals to pass on taskings
17	Can disrupt your work effort
18	It is cumbersome to sort through long email trails to determine the issue or requirement.
19	People can and do ignore messages
20	Perhaps we tend to use email at the expense of face-to-face communication.
21	Too Much
22	Many people are not adept at written communications. Their email can cause confusions and misunderstanding, which takes a lot of time and effort to correct all parties.
23	To many in a day and taskers that are not properly routed
24	I think it enhances. It only hinders indirectly when too many people get involved in a project unnecessarily. Then, you get too many irrelevant emails flying about.
25	Emails have become the primary means of tasking workers and staying to respond to the next email prevents coordination, visits and observation of assigned actions.
26	Too many emails - lose sight of what is the priority item to work on.
27	Current filters will not allow me to receive certain .exe or .zip files that are required for the performance of my duties.
28	Sifting through the non-essential.
29	Too many unnecessary emails being sent out that does not need to be sent out. People don't take the time to screen who the email should be sent to and simply use the "shotgun" approach.
30	Too much time working SPAM
31	Too much time spent filing/deleting "junk" & duplicate messages
32	Right now it doesn't - but I'm new here, give it time
33	Time consuming
34	New and (of course) urgent requirements arrive via Email and interrupts planned work.
35	takes me away from current activity

36	At times people want responses immediately. This becomes an issue when you are working on other tasks and need to stop to answer and email.
37	A common misconception is that once the send key is pressed the recipient and the sender have communicated even though the email has not been opened by the recipient.
38	I don't think email hinders my job performance.
39	Sometimes you get too much! There are days when you feel you spend the whole day sending and receiving emails.
40	There's just so much of it to keep up with and sometimes face-to-face is much better in resolving issues.
41	Can distract instantly.
42	Too much of non-relevant email.
43	Extraneous vendor, and/or Junk e-mail.
44	Because e-mail is the main mode of communication it does take time away from other duties.
45	Sometimes people say too much in a email and it would be better face to face.
46	Too many- it can be overwhelming and you spend all of your time in the "care and feeding" of your inbox.
47	Too much unnecessary email
48	People use it in place of face to face communication which I personally prefer. Some emails issues can be clarified faster by talking to people.
49	It is just so time consuming. You only have to spend a minute reading the messages but it may result in hours of work to carry out the requirements. Can't do it any other way that makes sense and it is still quicker and more effective than snail mail or phone and face to face dealings.
50	It works for me not against me.
51	too many emails to read
52	Does not
53	When I am CC'd in an email that has absolutely noting to do with me. In other words when two individuals that are corresponding with each other and the information have nothing to do with me and I am not addressed in any way. I check each email that I receive, most of the time it isn't for me.
54	Emails can have too much info instead of short, concise messages.
55	There is a lot of crosstalk in the email responses that gets off-topic.
56	Sometimes if a flurry of email is encountered over a controversial subject the inbox gets flooded and it's tough to keep up. Sometimes people can not properly convey via grammar what they are trying to say and then you send an email to requesting clarification and it gets worse. Then it's time for a phone call.
57	It doesn't
58	High volume
59	You can't demand instantaneous feedback - - that can be a pro and con of e-mail. You can start the conversation, but you cannot necessarily govern the recipient's response time.
60	TIME CONSUMING. I refer to writing emails as "crafting" them since you have to be so careful as to not offend anyone through wording/tone.
61	My email account sometimes gets to full when I am off site which prohibits me from sending out necessary emails.
62	oo many send of high importance. They must be read in order to determine their true importance.
63	Too many non-value added emails.
64	Too much of it is useless
65	When clarification of an email is needed, either a second email or another line of communication will need to be opened.
66	Some junk email tends to slow down the process and requires my time to read.
67	I need a larger size inbox. I like to keep everything for reference at a later time.
68	Volume is huge. Hit and run scene - - e-mailing considers task accomplished when the send button is pressed, regardless of quality of msg sent. It is harder to plan a workday because it's easy to get trapped reading the mail.
69	duplication after duplication
70	Filters on junk mail don't always work properly.
71	Because it is quick and easy there is a tendency to add people to the dist list that may not necessarily need to be on it and being on the "receiving" end it becomes a hindrance.
72	have to at least open each one

73	Sometimes email does not allow the reader the detail or the specification by the sender, then a follow up telephone will usually provide the best method of communication to ensure everyone is talking the same thing.
74	Since email has become more "official" in its nature, it requires more time to file and organize.
75	Get too much outside my lane to wade thru each day.
76	lots of unnecessary information to file
77	by consuming time needed in conducting personnel issue or reducing the socialization needed in team building
78	doesn't work, often have to burn info to a CD carry it home to e-mail it from my yahoo account because it otherwise won't go through the PEO EIS system or I spend 50% of my outlook time cleaning out my in-box
79	I get too much of it. It takes time to read and review. I often don't find the urgent actions awaiting review until valuable time has been lost.
80	Far too little face-to-face relationship building.
81	Volume can slow down response.
82	The time it takes to respond.
83	Can be an interruption. Can be a distraction. Can leave me feeling fragmented.
84	N/A. There are always e-mail notes that waste time, but it is easy to delete them and move on. It is much harder to escape from a meeting or a phone conference that turns out to be unproductive or a waste of time.
85	It does not
86	It does not.
87	Too many "FYI" emails that may not be relevant
88	n/a
89	sometimes
90	NA
91	It doesn't except when the LAN team is unable to keep the system up.
92	doesn't
93	Email hinders job performance because it breaks face-to-face communication with co-workers which I think is important in daily work activities.
94	There is so much of it -- people need to learn not to hit the reply to all key. Really cutters up the system.
95	Time spent sorting, answering, deciphering
96	Have to constantly monitor although the pop up alert has significantly reduced that time.
97	When I have to play catch up after being gone for a couple of days
98	Response is dependent on when the other side reads the note and responds.
99	No
100	Gleaning lots of it to find the important stuff.
101	Way too much time consumed in doing email.
102	too much
103	It hinders my performance when the help desk people spend hours trying to fix it
104	The relatively light volume I receive doesn't
105	When it is not working
106	too much non relevant stuff
107	Too much time on email, not enough time left for actual working.
108	It doesn't.
109	too many

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APPENDIX E. RESPONSES TO QUESTION TWENTY-TWO

22. What is your biggest pet peeve regarding email?

#	Response
1	Junk mail. Chain mail.
2	bulk mailings repeated over and over
3	I don't have a pet peeve regarding e-mail.
4	chain email
5	When you know someone sent you information and you never receive it but another person in your office does with you on the TO: line.
6	Inability to log on from outside the office many times.
7	needs more clarification
8	Hitting the "reply all" button when just a 'reply' to the sender will suffice.
9	Failure to note a suspense date in the subject line. Having to search for the date in the body of the message is frustrating. It's even worse to find out you even have a suspense if you don't open it right away.
10	Email that is too long-winded, which could have been concise, if only the sender took more time in organizing the message.
11	Blackberries
12	continuous forwarding of emails
13	Difficult to search; spam
14	Junk mail.
15	Social events and "shot gun" addressees.
16	Forwarding of forwardings...
17	Spam
18	taskings by e-mail when the action required is buried within a multitude of forwarded messages that you have to search. The e-mail sender should be required to at least summarize the action instead of forwarding to a distribution list.
19	People with hand held devices do not read attachments where the important details are.
20	black berries sometimes are inoperable - no communications
21	All caps. People who "respond all" to messages that don't require that type of response. People who disregard good grammar, spelling, and punctuation. I also don't like the use of needless symbols ;)
22	Reminder and nag notices
23	People on cc who have to get involved in the issue and lack of thought that people put into composing their messages.
24	Chatter about nothing
25	Multiple strings of email branching off from a single lead. It is like a conference where no one is listening.
26	Senior leadership misuse of email
27	Persons with poor written communications skills. Some can barely put a sentence together.
28	Any one with access to the email believes it is their right to send an email and expect a complete timely reply regardless of the subject. Sending large briefings from outside the command and expecting them to be updated along with conflicting statements from other sources being resolved.
29	Junk email. Unclear email.
30	SPAM!!!!
31	Ego's and adding too many unnecessary to and from addressees.
32	People sending an email string with an action required buried deep within it and the person forwarding it not alerting you to this fact and having to read through the entire string to find the action.
33	Careless spelling and grammar.
34	People who send a long string of e-mail correspondence with the message "See Below", and expect me to read the whole string from the bottom up (instead of providing a short summary of the issue they need a response to)
35	Junk mail

36	When you have to read through a ridiculous amount of forwards to get to the initial information and to determine what the e-mail is about
37	An email that says "see below" and you have to read through all the previously sent email messages from the bottom up.
38	junk
39	People do not know how to use the to line.
40	It is difficult to identify distribution lists.
41	Emails from the person next door
42	I don't have one. Except if you could do something about being spammed continuously -- at my home email address that is! ;o)
43	Quantity, but that probably has a lot to do with position.
44	Lack of vertical communication on organization actions. It is not due to difficulty of communication.
45	eliminate junk or spam email traffic.
46	Too many Archive Files with unique job related information in sub folders.
47	Nothing on subject line e-mail that doesn't apply to me because someone didn't read it carefully duplicate messages (again someone didn't read carefully)
48	none really
49	Bulk distribution emails that have huge file attachments that tie up my system when downloading for several minutes
50	Everyone uses it for everything
51	Chain emails where the original email is never read and the goal drifts from the original messages intent.
52	I don't really have one.
53	No pet peeve. It's all good.
54	people explaining exactly what their requirement is
55	When it breaks down
56	Virus scans in the middle of the workday. Computer maintenance performed by the DOIM without any warning.
57	Attachments.
58	Some people (most) live/rely on it and some people don't. Having to adjust to the people that do not want to use it, learning their habits and adjusting to their way of doing business.
59	None
60	junk mail
61	When someone forwards a message intended only for their eyes to a larger audience.
62	When people put read receipts on my emails.
63	junk email
64	Emails of no interest. What’s interesting to my supervisor may not be of interest to me.
65	REPLY ALL
66	email I have received already is forwarded again to me ad infinitum
67	Knowing if it's a mass distributed email or if it's directed specifically at me.
68	Large attachments when traveling and using limited bandwidth connection.
69	spam
70	an erosion of grammar, disregard for formal communication, and an erosion of personal interface and voice comm
71	bulk
72	Too much of it
73	prior to email you could go on leave for a week and when you returned you might have a handful of phone messages. since the inception of email, you return from leave with 100-200 emails. how many of them are really necessary?
74	people hitting reply all to say "got it"/"thanks", people hitting reply all without thinking through the target audience, people replying that they got my email
75	forwarding messages with trivial comments and long trailing messages.
76	People to respond to "reply all" when not required People who don't understand the intent of the "to" and "cc" addresses.
77	When people hit "reply all" when they only mean to send a note back to the original author of an email.

78	organizational spam that related to news events or activities
79	I can't send the files necessary to do my job
80	Not having enough allocation to keep emails until the action is complete. I have to delete them or get locked up.
81	People removing folks from the cc: line on important issues because they choose not to hit reply to all.
82	Reply's to all when not required
83	When a face-to-face would better for the situation.
84	That people try to use it like a messenger service when what is needed is face-to-face communication
85	Many users do not take the time to develop their thoughts. Instead of working from an outline and composing their thoughts, they string together a bunch of random thoughts and send it. The result is a note that is meaningful only to the sender, and hard to understand for the recipients.
86	Don't have any
87	None
88	Too little storage per user (50MB). Almost all emails come with attachments. These days storage is cheap and 1GB per user should be normal Allow larger files thru PEO firewalls/filters (current limited to less than 5 MB)
89	n/a
90	too much FYI and non job related emails
91	People replying to mass e-mails.
92	CCing me when I don't need to see it.
93	The LAN Team
94	junk
95	Receiving a bunch of junk mail.
96	When the server is down we can't work -- there are no backups and the system is down fairly often
97	bulk e-mails, social e-mails, humorous content also becomes annoying when your inbox is full.....AN ANNOUNCEMENT FROM THE LAN TEAM THAT YOUR MAILBOX IS FULL!
98	Don't have one
99	Spam mail.
100	None
101	Fwd, Fwd, Fwd, Fwd--don't make me open up but one email!
102	Too much of it.
103	remote access stinks
104	The junk mail I never requested - it just pops up also when I put in a help ticket, I get an immediate response but rarely see a person for days if ever
105	None
106	Downtime
107	junk emails
108	Time spent attending to it.
109	Can't access outside the office.
110	multi-mega byte attachments

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APPENDIX F. RESPONSES TO QUESTION TWENTY-THREE

23. What might be done to improve the use of email in PEO EIS?

#	Response
1	Filter chain mail automatically. Junk mail penalties for senders.
2	Screen before sending to everyone
3	Unknown.
4	get rid of chain email
5	Ensure that all persons in PEO EIS were on the global (to include EI personnel).
6	make concise
7	Continue to encourage users to respond to the sender and not to all addressees unless the information would be beneficial to all addressees.
8	Establish guidelines for use of email (i.e., include symbols for Action Required, Suspense, Info Only, etc.
9	Inform people not to abuse the email.
10	enforce no extraneous unofficial messages
11	Increase limits on file sizes and size of storage. Find a good third-party search tool.
12	Working well for me.
13	Nothing I know of.
14	Can't say
15	Not sure
16	A system to convert voice messages to emails.
17	Nothing in particular
18	Using existing portals
19	Keep it as it is. PEO EIS mostly uses email to distribute information. Really do not see abuse from that office.
20	hire better people. E-mail in itself is not the problem - only a tool that is used either correctly or incorrectly.
21	Publish policy that allows personnel to perform their job with email as a tool to be used as management would expect us to use any expensive but dangerous tool. Limit the flow of FYI, blind copies and good ole boy communications. Mandatory identification of taskers (with estimated completion time) Routed through established channels to task managers. Guidelines/Options for rejection established and metrics showing the volume of effort and time devoted to email activity. Classify emails as to importance and mission requirements with punitive actions for those abusing the system. Only persons with tasking authority allowed to suspense and task within assigned limited bounds. Others subject to being charged premium rates for work requested. Authority coupled with responsibility to use available resources to solve situation rather than repeat data calls for personal convenience. Systems where large volumes of data have to be repeatedly gathered and submitted via email need to converted to systems with assigned local operators accessing the system to input data changes as they occur rather than massive data collection after data collection of processed data when an update is desired.
22	Provide guidance/best practices to employees.
23	Better SPAM filters.
24	Nothing human nature is what it is.
25	Develop internal non-reportable standards
26	Cut down on duplicate messages, i.e., when the PEO distributes to all employees, it shouldn't be forwarded again by anyone else.
27	Nothing at this time
28	Consolidate info
29	Eliminate the duplicate bulk emails.
30	training
31	A centrally managed distribution list of PM office POCs. It is difficult to identify to whom correspondence should be sent.
32	If possible check to see if the person is available to speak with face-to-face, then think about using the email to get information or to talk to them.

33 First, I find that I am always running out of room in my email. I like to keep my emails in folders so that I can refer back to them when necessary.

34 Oftentimes we get the same email from different divisions within PEO, because they haven't talked to each other or coordinated in advance. Better coordination is critical.

35 Expand ability to work from home. Commuting is a major disadvantage to working in this area when the Internet does not care where you are located, just that you get the results.

36 Routing relevant email only to who needs it for action.

37 There needs to be a better way to categorize and prioritize e-mail into a meaningful structure.

38 Use more Knowledge Sharing tools on AKO - rather than sending an email with an attachment, send a link to a collaborative knowledge center

39 No Idea

40 Nothing

41 In my position I cannot think of anything.

42 Right now, It's all good.

43 make sure you explain what you want up front by keeping messages short, simple, and too the point

44 have backup to ensure continuous operations

45 Send out notices when maintenances are to be done. Give us prior warning when performing tasks. Stop sending out duplicate copies of the same email. I think folks should review the recipient box before forwarding email to anyone. this way they don't send it to people that have already seen it.

46 I think it is used pretty efficiently, overall.

47 Hope that's what you guys can come up with policy? Hard limit the number of addressees on the CC: and To: lines?

48 Devise better/easier filing methods for easy message retrieval (I'm not the best "filer".)

49 More space to store saved emails as needed.

50 any improvements would have to be on the personal level not the system itself.

51 I don't know?

52 add spam filters train personnel on proper use of email

53 I think it's actually used quite well within the department.

54 Have large attachments not be part of the initial download.

55 coordinate within to preclude passing a task/information several times with a slightly different twist

56 Only send absolutely necessary correspondence to all individuals

57 people need to be more cognizant of their email habits and think twice about who they place on distribution.

58 education on email do's and don’ts

59 Read it and respond, especially when it requires action on another person's part.

60 Train people to not resend or forward large files to the same people over and over again when they only rely need to send a text response to the original author.

61 provide more interactive elements such as similes, art, and recordings (sound and video)

62 keep the system up and functional, increase the pipeline for sending files and increase in-box size so that you can receive more than one e-mail at a time

63 Reduce informational mailings and use a common informative site instead.

64 Limit response to all.

65 No

66 Shorten the scope of some of the broadcast emails about farewell luncheons. Use high priority message tags when appropriate.

67 Migrate to 2003 Exchange to enhance web mail and calendaring issues.

68 Increase email storage per user. Allow larger files thru PEO firewall/guard

69 Can not think of anything.

70 don't know

71 Keep the e-mail server operational and expand the amount of space

72 Policy and Training

73	Keep it running. Keep the server on the air.
74	works fine for me
75	Not sure at this point.
76	Change the firewalls to let us get larger files through. Our system is overly restrictive.
77	Limit bulk e-mails.
78	Have people check the addresses on email messages prior to forwarding them. This will cut down on receiving the same message multiple times.
79	Reduce Spam mail.
80	Nothing
81	There should be a "Rules of Email Etiquette" class required for all employees--could be online or via MyEIS site
82	More face-to-face discussions.
83	send some type of classification that shows admin, tasker, FYI,,
84	Keep the system running - it is down more than it is up
85	No suggestions
86	Optimize network connections. Reduce/remove non-essential servers/connections. Enforce e-mail policies.
87	filter junk emails
88	Ensuring that taskings are received from the correct source instead of several times via email from different offices.
89	Give everyone a blackberry.
90	Need to allow temp storage when TDY or on leave. Today we just receive notices that the mail box exceeds limits and eventually will not permit use of the account which is a major hindrance when on leave and TDY.

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APPENDIX G. RESPONSES TO QUESTION TWENTY-FOUR

24. Is there anything else you would like to tell us about email usage?

#	Response
1	Question #23 states my complaint
2	No.
3	I don't think we can live without it
4	no
5	No, find it very useful and can hinder you only if you let it.
6	No.
7	I need it to communicate within unit and keep everyone abreast of travel updates.
8	E-Mail's are routinely misunderstood, causing over reaction by personnel involved.
9	No.
10	No
11	It is a good tool.
12	No
13	No
14	More of a hinder
15	E-mail is great for technical people as it is deliberate and can say exactly what needs to be said. I would be much less effective without it.
16	Charge people for the privilege of transmitting chain type emails. Establish an office to monitor, evaluate and advise where email abuses have been discovered. Discourage the use of large mailing lists to send email to a limited number of personnel. Form an email improvement cell within the organization to target problems neat initiatives and recommend to management the improvements needed to better use this critical resource.
17	no
18	Encourage proper sentence structure and spelling.
19	No
20	It's a necessary evil.
21	We can not work without it, but it drives you crazy.
22	It is a great way to get information out quickly to a large group of personnel simultaneously, provided a distribution list is readily available for use in getting the information out.
23	Think about using other methods of communication before using email.
24	No.
25	Just that this program office is remote from the PEO at Ft. Belvoir and therefore increases our usage of email vs. face-to-face opportunities.
26	I question the need to concentrate the power to control the system configuration when I can perform my communications from home with better, more dependable connectivity.
27	Overall it works well for communicating with a decent response time.
28	No
29	No
30	It is full time for me. Most of my job revolves around it.
31	Besides the phone, It's the best communication around.
32	no
33	N/A
34	I would like to say that email is cheaper and quicker than a phone call (in some cases). People are more likely to check their email rather than checking their voice mail. I use my email frequently.
35	Nope.

36	of course I can not do without it!!
37	no
38	no
39	No
40	Can't live or work without it!
41	to much down time lack of meg/bytes and storage capacity language can sometimes be misinterpreted
42	nope
43	Email is a fact of life and used correctly is a very effective tool for communications.
44	give people an e-mail etiquette course i.e. TYPING IN ALL CAPS COMES ACROSS AS YELLING, the TO line is for people responsible for performing the content the CC line is for FYI purposes etc.
45	No.
46	Critical to our mission.
47	No
48	Nothing
49	no.
50	Educate people in use of email. Don't copy someone unless it’s really required.
51	no.
52	No
53	The LAN team is incompetent
54	No, not at this time.
55	The PEO EIS AIT team does not seem customer focused. I hope this survey gives them food for thought.
56	What used to take five-ten minutes by using the phone or conducting a face to face now can take 1/2 a day through several e-mails.
57	No.
58	No
59	Too often it is substituted for personal contact to the point that we really don't know people personally anymore, except for the few times a year we get together.
60	Even though there are many complaints about it, can't function without it now.
61	no
62	Yes since all of the administrative rights have been given to helpdesk, it is a pain to have to call to get them to hook up with a printer. Its like big brother
63	No
64	Quotas are not big enough.
65	Make this survey shorter and more specific
66	My mail freezes at least once a week because I have so many in the queue that I have not been able to read and file or delete.

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