SOLUTIONS

TO

INFORMATION

OVERLOAD

The Definitive Guide

Nathan Zeldes

Solutions to Information Overload: The Definitive Guide

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www.nathanzeldes.com | Email: nathan@nzeldes.com | Tel: 972 - (0)54 - 3530381

Let's connect!

This guide could never have been written were it not for my many conversations with like-minded knowledge workers, researchers and practitioners across the globe. I welcome you to join the conversation, and invite you to connect through the many social channels available to us. Go ahead and Connect to me on LinkedIn, Like my Facebook page, or follow me on Twitter.

My newsletter and blog share knowledge and news about information overload and knowledge worker effectiveness in general; you'll want to subscribe to the list here and read the blog at http://www.nathanzeldes.com.

If you have interesting insight of your own to share about Information Overload and its solutions, feel free to drop me a line to nathan@nzeldes.com. I would be especially interested to hear about your implementation of any of the solutions described below, or of any other solutions I may not be aware of yet.

Of course, if you need help in choosing and applying the optimal solution set for your organization, I am at your service with a number of possible engagement models, which you can check out at http://bit.ly/NZ-IO.

> – Nathan Zeldes

About the Author

Nathan Zeldes has been studying information overload for twenty years, during which he's developed and deployed original solutions at numerous companies. He's exchanged knowledge and solutions with scores of organizations worldwide, and is the president of the Information Overload Research Group, of which he is a co-founder.

Nathan is recognized as a global thought leader in the search for improved knowledge worker effectiveness. Having enjoyed a fascinating career as a manager and principal engineer at Intel Corporation, he now helps organizations to solve core problems at the intersection of technology and human behavior. His experience includes initiating and leading corporate programs in the domains of Information Technology, Innovation management, Internet applications, Remote and Distributed work, and Knowledge management.

Preface

Two decades ago I discovered that Information Overload was growing into a massive problem at Intel, where I was in charge of knowledge worker effectiveness. The quantity of email was going out of control, and people were suffering major stress as they scrambled to deal with it. We were becoming at once less effective and more miserable.

At the time there were few ready solutions available to this problem; I had to research and develop original remedies, which I proceeded to deploy across the corporation. This became a fascinating pursuit, because I found that the problem had as much to do with culture and human behavior as it did with technology. My work eventually became known outside the company, which led to many interesting conversations, friendships and collaborations with researchers, industry practitioners and software vendors worldwide. This in turn led me to the founding of the Information Overload Research Group, and to my present consulting career that has organizational info overload as a key focus area.

Meanwhile, the barren solution landscape of those early days has gradually evolved into a lively ecosystem of numerous and diverse solutions, some commercial, some homegrown within organizations, some personal initiatives shared across the Internet. They span a very wide range, from software tools for individual use to training programs for entire organizations, from personal coping strategies to company culture modifications, and many others. Unfortunately, many excellent solutions remain within the groups that invented them, outside the reach of the rest of the world; and many people I meet are unaware even of published solutions that would be a great help in their situation.

Finally I decided to bust this barrier to solution adoption by writing a systematic guide that would show all the solutions I'm aware of, along with brief notes as to their benefits, risks, how to best apply them, and – where available – lessons learned by companies or individuals that had done so. Turning this idea into a reality took far more effort than I'd anticipated, but I persevered, and the result is the present guide with over 160 solutions.

It is my hope that this work will be of use to the countless people worldwide who struggle daily with information overload; to managers willing to tackle the problem robbing their employees of their sanity and productivity; to business communicators facilitating such action; to researchers studying the fascinating field of communications technology and behavior; and to software vendors wishing to map the solution landscape.

Contrary to what you may feel, there is a great deal you can do to solve the problem at either a personal or group scope. This guide can help you identify tools and strategies that will enable you to do better work, do it more effectively, and have some time and peace of mind left over to enjoy your personal life.

Surely, that would be a Good Thing.

    – Nathan Zeldes

     February 2014

Introduction

Electronic communication channels like email, instant messaging, cellular telephony, SMS and social media have transformed the world we live and work in, enabling new heights of collaboration and information exchange. In parallel, the same technologies have spawned a severe problem of information overload that is wreaking havoc on the productivity and quality of life of knowledge workers around the world. The very same tools that enable modern businesses to function with impressive speed and global reach, and that connect friends and families across the planet, are inflicting a debilitating burden on the very people and organizations they mean to serve.

This guide examines solutions to the two aspects of information overload that are responsible for the predominant impact on knowledge workers: email overload, and the interruptions caused by the endless flow of message alerts, ringing devices and other distractions. Together these have been implicated in multiple damage mechanisms, notably loss of productive work time (estimated at 20–25% of the work week), reduction of mental acuity, damage to organizational processes, and harm to people's quality of life.

For references to relevant research and other resources on information overload, refer to the *Resources* section on the author's site: http://www.nathanzeldes.com/resources.

How to use this guide ◀ Read this before use!

As is evident in the following pages, solutions to information overload (specifically, email overload and interruptions) now come in a great variety of forms, functions and underlying philosophies. The question then becomes, how do you select which solution(s) to adopt?

Of course, the manifestations of the problem vary from person to person and from one organization to the next; thus, it is impossible to prescribe a single "one size fits all" solution. What you need to do is characterize the problem's effects and causes in your own work or across the group you want to address, and assemble a set of solutions that together will solve your problem without exceeding the resources you're able to allocate. Where this guide comes to your help is in laying out before you the entire range of available strategies, products and ideas that others have envisioned or applied before you, so you can make an informed choice while avoiding any pitfalls discovered by them.

Here are some tips for applying this guide, depending on your situation:

For the individual user

If you are a victim of information overload and intend to address the problem for yourself (not as part of an organizational program), you should go over the list of solutions and identify those that don't require cooperation from others. Pay special attention to the section "Solutions that improve Inbox Processing efficiency": most of these can be applied in solo mode, although the other sections also have some ideas you can put to use, or that can inspire insights that will increase your productivity.

Feel free to experiment: most of the solutions in this guide that are suited to personal application can be tried without serious risk, and retained or discarded once you see how they work for you. The software tools available to you are often free or trialware, so you can test any that catch your attention; and personal strategies for managing the load are even easier to evaluate. Of course, it is advisable to back up your email files and create a system restore point before installing add-ins that interact with your mail.

For the manager or communicator in an organization

Given the complexity of modifying organizational behavior, trying to solve information overload in a group is best addressed with professional help, whether internal or external.

The structure of this document as a functional taxonomy may help you home in on solutions developed to address the specific issues you want to resolve, and it will be advisable to package the ones you choose into a coherent change program. Many companies brand such a program with its own catchy name, slogan, logo and internal PR materials, and deploy it with attention to the usual elements of change management, including close sensing of responses and monitoring of the impact. Your HR group is likely to have the know-how required for facilitating this process.

A note of caution: it is important to avoid the temptation to blame it all on the technology. The root causes of information overload run deep in the undercurrents of organizational culture and human psychology; they often involve problems of mistrust, evasiveness, and misguided workplace politics. There is much you can do without going after these issues, but the most serious solution programs are those that recognize the underlying cultural problems and attempt to solve them through education drives and other means. Solutions of this nature are grouped below in their own category.

Keep in mind that products meant for the individual user are also relevant in an organization, if deployed centrally as part of the IT build (see appendix).

> **The author will be happy to provide further advice** on implementing your solution program – see http://bit.ly/NZ-IO.

For the academic researcher

Resulting from two decades of work at the forefront of the battle on information overload, this document provides a taxonomy of IO solutions of every kind, presented with a wealth of related information gleaned from the experience of a variety of organizations. This data set should provide ample food for thought and further study by those researching the interaction of computer mediated communication and human behavior.

For the software vendor

Developers of software products aiming to mitigate information overload will likely find in the products described here – both commercial and homegrown – a useful map of the competitive landscape. It is also possible that the wealth of directions exhibited by other

(non-Product) solutions will trigger useful ideas for novel products; indeed, there are some solution concepts presented here that have yet to be claimed by anyone, and you're welcome to make use of them!

About the solutions

Purpose and scope

This document is a comprehensive, categorized listing of past, current and potential solutions to organizational and personal Information Overload (taken here to include email overload and interruptions).

The primary objective is to present you with the widest possible "menu" of solutions that can be of benefit in addressing the IO problem affecting you or your organization. In addition to proven homegrown solutions and commercial products, this includes some ideas and radical concepts that have never been implemented in practice but that the author has either envisioned or become aware of over his years of interaction with IO practitioners and researchers worldwide. In fact, a key benefit of this guide may be that it can provoke you into considering a wider range of solution directions than you would otherwise entertain, and trigger new ideas that may lead you to improve your situation more effectively.

Having a comprehensive list of solutions means that some of them may well be better than others. By design, no attempt has been made to rate the solutions, nor to weed out the "worse" ones. The intent is to inform; it is up to you to decide which tools are suited to your situation and resources.

Product descriptions

Entries prefixed by **Product:** describe a specific software product, whether commercial or free. It should be stressed that not all these products have been tested by the author, and their description is not meant to be taken as a product review; they are described for information, but the author makes no claim or recommendation regarding their performance or reliability.

The author has no financial interest in or business relationship with the makers of the products described, with the exception of Unified Inbox, where he serves on the company's advisory board.

Disclosure of known implementations

Where available, the description of a solution includes information about known implementations and their outcomes. The reader will note that the level of detail shared varies considerably, with some cases including names of companies and details of results attained, while others are limited to partial or anonymous references. It should be understood that all the references made are to cases whose details are known to the author; however, only in cases where the company involved has released the information to the public, or authorized the author to do so, is the company's identity disclosed. Given

the potentially sensitive data involved, many companies are unwilling to share actual observations of pre- and post-solution performance, and this too has been respected.

Sources

The information listed herein come from a variety of sources, covering roughly the last 20 years of relevant activity in organizations of many kinds and sizes from around the world.

Sources include:

- The published academic research literature.
- Public information provided by solution vendors.
- Media reports and articles.
- Personal communications with researchers, vendors and practitioners in scores of organizations, notably in the author's role as founder-president of the Information Overload Research Group.
- The author's own work as Computing Productivity manager and IO champion at Intel Corp., and later as an independent consultant in this space.

Details of solutions obtained through private communications are shared to the extent permitted by their sources.

Disclaimer

While every effort has been made to ensure the information provided herein is accurate, mistakes can happen; the author assumes no liability or responsibility for any errors or omissions in the content of this document.

Commentary provided about the solutions' advantages and risks, and about the best way to apply them, represents the author's personal opinion, and should be viewed accordingly. The changes required to mitigate Information Overload are complex and sensitive to multiple factors, and therefore anyone seeking to apply any of these solutions should study their applicability to their organization, its culture and circumstances; adapt the solution as required to match these factors; and track the implementation closely. The author is pleased to provide this document as a trigger and food for thought, but cannot assume responsibility or liability for any damage or effect arising out of reliance on, or use of, the information it contains.

All trademarks and trade names mentioned in this document are the property of their respective holders.

List of solutions included in this guide

To keep abreast of additional solutions and new developments in the ongoing battle on information overload, subscribe to Nathan's newsletter!

Detailed solution descriptions

1. Solutions that improve Inbox Processing efficiency

This category includes solutions that aim to make the processing – especially, prioritizing and filing – of incoming email arriving at one's Inbox faster and more efficient. While many can be applied locally by an individual, there are others involving team-level agreements and standardized group practices that translate into easier screening of incoming mail by each of the group's members.

The benefits of these solutions vary from user to user. Typically for any given tool there will be some people who swear it revolutionized their work life, while others will find it annoying or counter-productive; it depends on the match between a tool's philosophy (and implementation) and the individual user's work style.

Note that even if you don't plan – or aren't allowed – to install the products listed here, you can still learn a great deal from considering the diverse and ingenious methods they use to combat information overload.

1.1. Personal email processing strategies

♦ **Read email only in predefined daily time slots**

This is probably the single most important change an individual can adopt to improve their state vis-à-vis personal information overload. In the words of Tim Ferris in his bestselling *The Four Hour Workweek*: "This habit alone can change your life. It seems small but has an enormous effect". For more insight, see http://bit.ly/IOCR018.

What: Resolve to only check incoming messages and process the Inbox in the same predefined time slots every day (e.g. right after lunch; or, 8–9 AM and 5–6 PM).

Benefits: By not checking email every few minutes around the clock, and doing it in long, uninterrupted time blocks, effectiveness improves both for the email processing task (because it is now contiguous) and for everything else (due to the elimination of interruptions).

Caveats: While some people fear that they may lose critical communications, the fact is that they have other channels they can be reached on in an emergency (e.g., SMS and telephony).

Because people have become used to receiving instant response, there is a risk that some of them will be annoyed if they need to wait a few extra hours for a reply from a colleague who uses this strategy. To eliminate this sentiment, however unjustified, one should communicate one's time strategy while making known the available channels for immediate contact (cellular number, admin's details, etc.). In this context one should consider AwayFind (q.v.) as a complementary solution.

Implementation: For such a strategy to work, one <u>must</u> turn off all incoming message alerts, in both fixed and mobile devices.

Existing cases: A growing number of individuals (the author included) are seen to adopt this strategy component with gratifying results.

♦ **Adopt the Inbox Zero strategy**

> "It's not how many messages are in your inbox – it's how much of your own *brain* is in that inbox. Especially when you don't want it to be. That's it." – Merlin Mann

What: *Inbox Zero* is a concept introduced by Merlin Mann, the author of the productivity blog 43folders.com. It involves a philosophy and a collection of techniques to process an overflowing Inbox rapidly and resolutely, and ideally getting it to zero at the end of each day.

Benefits: The techniques presented by Merlin Mann are sensible and valuable, and can serve as excellent tools in the hands of anyone subjected to heavy email loads. The mindset impact is no less valuable.

Caveats: One should apply these techniques with care, adapting them to one's particular work environment and circumstances. Some people do in fact reach an empty inbox daily; others are satisfied to do so weekly, or to keep the Inbox under one screenful. Do what makes sense to you!

Related links: http://inboxzero.com/ has the details.

♦ **Adopt the Getting Things Done methodology**

What: Getting Things Done (GTD) is a Time and Task Management methodology created by productivity consultant David Allen, and described in a book of the same name. It involves a detailed methodology of weekly planning and organization of one's task workload, and processing of such tasks into lists and priorities.

Benefits: GTD has a large following of people that find it very effective.

Caveats: Not everyone finds GTD to their taste; it depends on the match to one's personal work style.

Implementation: Although GTD is tool agnostic, there are numerous software implementations, many of them integrated with email tools. A comprehensive list is to be found in the link below.

Variations: There are many systems that include or adapt elements from GTD. Worth noting is Priacta's TRO system, which is based, according to Priacta, on enhanced GTD principles.

Related links:

David Allen Company site: http://www.davidco.com.

A list of over 150 software tools that embody GTD, compiled by Priacta: http://bit.ly/IOCR019.

Priacta's TRO system: http://bit.ly/IOCR020.

♦ **Consume information via RSS feeds**

What: Unsubscribe from various email-based information sources that are also available as RSS feeds, and consume them in a newsreader instead.

Benefits: While less comprehensive than an organization-wide move to enterprise content syndication (q.v.), a personal move to RSS for consuming non-urgent information can reduce inbox bloat and relieve some of the associated stress. The key difference is psychological: with email, there is an implicit expectation that you read all incoming items ("clean the inbox"); with a newsreader you scan the list and only read what seems of interest, without agonizing over the rest.

Implementation: This strategy requires a newsreader application. There are numerous available options, many of them free, as listed in the link below.

Related links: A list of newsreader applications: http://bit.ly/IOCR021.

♦ **Optimize short-term message filing**

What: Define a set of folders to store messages that require action in the near future.

Benefits: This is a necessary step in order to apply the important principle of not using the inbox as a "To Do list", and removing from it any message that has been read once.

Implementation: The specific folders used will vary from person to person, and must match one's work methodology. Examples include:

- To Do Today / To Do Soon / To Do Later [when I have some time].

- Project A action / Project B action /Project C action / ...

- Hot / Normal / FYI

Once you have an effective folder taxonomy, there are many software tools that can help you file each message in the right folder. See the section "Support for filing incoming email" in this guide.

♦ **Optimize long-term message archiving**

What: Create a folder structure for storing messages that require no further action.

Benefits: Although a good Local Search tool (q.v.) would make this less critical, people do tend to prefer to store their messages by some logical folder taxonomy.

Caveats: Having too many folders, or ones that don't make sense, can make retrieval a messy affair. It's a worthwhile investment to consider carefully up front what the folders should be.

Implementation: The specific folders used will vary from person to person, and must match one's personal convenience and style. Examples include:

- A folder for each project.

- A folder for each person (subordinates, usually).

- A folder for each customer account.

- A folder for each subject or topic.

- A folder for each time period (month, quarter, or year).

♦ **Apply Local Search as an alternative to accurate filing**

Read more at http://bit.ly/11hzkcB. Note that of the tools mentioned there Google Desktop has since been discontinued by Google; the desktop version of X1 Search, however, is available and maintained.

What: Implement a powerful local search (a.k.a. *desktop search*) tool, to enable finding any email instantly by its attributes. Here "powerful" means capable of finding within a second or two all stored messages conforming to advanced Boolean criteria, e.g. "All messages whose subject contains the word *Acquisition* but not the word *IBM*, whose body contains the phrase '*board meeting*' as well as the word *dividends*, and that were sent during May of 2009 by John Smith to anyone except Mary Jones".

Benefits: Such a tool confers two major benefits: it allows you to find anything you've ever stored on your machine really fast, and it makes it far less critical how you set up your folder structure and where you file a given message (because no matter where you file or even mis-file an item, you can be certain that you'll be able to find it instantly). With most local search tools these benefits apply not only to email, but also to meetings, contacts, documents, images, and other files located anywhere on the local hard drive.

Caveats: Take care when selecting a local search application, to verify its suitability to your system and needs. Consult your IT group as to the security and reliability implications of a specific tool before introducing it into an enterprise environment.

Implementation: In Gmail, excellent search capability is included in the base product. For local mail clients such as MS Outlook (whose built-in search leaves something to be desired) a specialized search tool needs to be installed; one that does locally what Google does for the web – run in real time or on some daily schedule to index all email items and files.

It is advisable to assess the available search tools (see list in the link below) on performance, usability and price.

Related links: A partial list of local search tools: http://bit.ly/IOCR022.

♦ **Apply the "Five weeks folder" method**

What: Set up a folder called "Five Weeks" that deletes its content automatically after five weeks. Use it as a repository for messages you're unsure about, such as that email you want to delete, but you're not sure if the sender might call you tomorrow and ask about it. If, when screening your Inbox, you hesitate for more than 2 seconds about deleting a message, put it into "Five Weeks" and forget it!

Benefits: This simple method speeds up inbox processing considerably, because it does away with the procrastination and doubt that slow down outright deletion: anything thrown into the folder can, after all, be retrieved for five full weeks. The five week interval was picked so that any monthly recurrent items would not disappear before the next one came in.

Implementation: The creation of a folder is a trivial task; setting it to auto-delete content after five weeks is easy, but these days, with practically free storage, the deletion part is arguably no longer necessary.

Existing cases: This simple method, invented years ago by the author, has been published in a variety of media and taught at Intel and elsewhere on many occasions.

1.2. Group-wide agreements facilitating inbox processing

♦ **Define group-wide subject line cues or hashtags**

What: Define standard prefixes for the subject line that serve as cues, indicating the nature and urgency of the message. Commonly used cues are AR (Action Required), HOT or 911 (Urgent), NRR (No response required), FYI (For your information), and ORG

This solution has particular appeal, being cost-free, easy to implement and immediately useful. Indeed, it is one of the most common decisions that the author has observed groups arrive at when they discuss improvements to their email culture.

(Organizational announcement). Others can be defined to match the group's messaging needs.

Benefits: Once the set of cues is accepted by an entire group, their use allows prioritizing messages in the Inbox without having to open the message. This is a very immediate, useful and low-cost solution.

Implementation: In addition to defining the cues, the group should standardize on their format. They would typically come at the head of the subject, either followed by a colon or enclosed in square brackets, and in all caps. Cues can be concatenated, as in **HOT AR**.

The list of cues should be publicized to group members, and included in any training materials involved in an IO improvement program. In particular, they should be included in new hire training to ensure everyone is aware of them.

Variations: It has been suggested to replace cues with hashtags, made familiar in Twitter, as in #URGENT. In this case people could add their own tags, and use multiple tags in the same subject.

Existing cases: Use of predefined subject cues has been applied at Intel and in other companies on many occasions.

Related links: The case for email hashtags: http://bit.ly/IOCR014

♦ **Promote the <EOM> one-line message style**

What: Define a group agreement that for really short emails one will use the subject line alone, ending it with <EOM> for "End of Message"; the message body will be left blank.

Benefits: Use of this style saves the recipient time and gets the sender's message across in the first prioritization scan of the Inbox, which makes for more rapid communication.

Caveats: It should be noted and taught that when one replies to a message with an <EOM> at the end of the subject one should strip the <EOM> before sending the reply, since this would have text in the message body.

Implementation: This is a simple group agreement, which needs to be decided and communicated. It is also self-propagating, because the <EOM> in the subject is visible and anyone unaware of the agreement is bound to inquire and learn the idea.

Variations: If one were to develop an add-in to intercept low-quality messages just-in-time (q.v.), it would be possible to have it

identify messages short enough to fit in the subject line in this style, and recommend to the user to put them there.

Existing cases: This method has been applied at Intel and elsewhere; it is generally well accepted because of its simplicity and "neatness".

♦ **Define To/CC/BCC standards**

What: Define a policy to regulate the appropriate usage of To, CC and BCC in addressing messages. A typical policy might be:
To = A reply (or action) is expected; *CC = No reply (or action) is expected*. See below for comment on the use of BCC.

Benefits: Having such a standard defined and adhered to will allow recipients to reliably set up rules or filters that prioritize emails based on their actionable significance, e.g. "Highlight the message if I am on the *To* line". This can directly accelerate collaboration in overloaded settings.

See
http://bit.ly/IOCR015
for one way that BCC can backfire (and there are others!)

Caveats: If people set up rules that de-prioritize CC messages, and senders do <u>not</u> adhere to the policy, it is possible that important messages (where the recipient is erroneously put on the CC line) will be ignored. Thus the need for educating all group members in the policy.

Implementation: While To and CC are fairly straightforward to define, the use of BCC is trickier. It is usually restricted to mass mailings, to avoid Reply to All fiascos; many companies discourage it for ordinary messages due to its "sneaky" aspect (which may be perceived to be in conflict with a company culture emphasizing "Openness"), and its likelihood to backfire by accident.

Existing cases: The author has seen this solution implemented across Intel and in many other companies.

♦ **Seriosity Attent – an "Attention marketplace" system**

What: Attent applies concepts from online multiplayer video games to create an "economy of attention" by introducing to the organization a virtual currency called "serios", which is intentionally kept scarce. People can use their valuable serios to signal to recipients how important it is – to the sender – that the message be read soon. The recipient can see in their Inbox how many serios are attached to each incoming mail; ones with more serios tend to draw their attention. A reputation system based on Serio use patterns of individuals is visible to all and can affect sender and recipient behavior.

See the entry "*Have senders pay recipients to read messages*" for a different take, based on real money, on the notion of auctioning attention.

Benefits: Evaluation of this idea showed it to work – senders do use their serios differentially and recipients do respond accordingly. Unlike straight "quota" systems where you can send only X messages a day, this system can and does lead to interesting emergent behaviors, which result in improved communication and more effective email processing.

Caveats: This is a fascinating concept at the leading edge of research, which was in beta as of June 2011; it is suited to early adopters, but keep in mind that it is not yet a mainstream product.

Implementation: This solution involves a server component and an add-in for MS Outlook.

Existing cases: A case study of a test of Attent in a corporate environment is reported at the link below.

Related links:

Seriosity web site: http://www.seriosity.com.

Case study: http://bit.ly/IOCR017

Seriosity Attent is one of the most sophisticated and fascinating solution efforts the author has seen in two decades of IO research. Developed by a team of Stanford University researchers, it harnesses concepts from economics to psychology to gaming to devise a system that is effective as well as fun to use. Steering clear of using actual money, it uses the overall scarcity of the Serio "play currency" to force senders to think before abusing it. The visibility of user behavior – notably whether a given user sends everyone the same amount of serios or whether they differentiate between messages – affects recipient behavior.

As the cited case study concludes, "...synthetic currency attached to e-mail can change communication behavior for senders and receivers of e-mail messages. **This behavior change translated into an improved ability for receivers to prioritize incoming traffic, and for senders to get faster responses to important messages**". What more can you ask for?

Attent is not a commercial product as such – it is more of a "concept car" for testing and developing ideas around the economics of attention. It brought invaluable insights which will hopefully continue to help develop the state of applied research.

1.3. Automation of incoming email classification

♦ **Create rules in the email client**

What: use the capabilities of an email client to create rules that automatically highlight or file messages based on user-defined criteria.

Rules may react to the likely importance of the message to the user (e.g., "If I'm the only recipient, highlight the message in red", or "if the sender is <my boss> and the subject contains 'Urgent', play an alert sound"); its likely unimportance (e.g. "If I'm on the CC list and the subject contains 'FYI', move the message to the folder 'To read later' "); or other criteria (e.g. "If the message contains <project name>, forward it to <subordinate name> and delete it").

Benefits: The ability to form rules is present in various email applications, so there is no added cost in using them, and they can help the user prioritize reading important messages, eliminating useless ones, and applying simple workflows of filing and delegation.

Caveats: A rule is only as good as the logic that has been put into its definition. It can be all too easy to create a rule that will not do what the user expected; for example, misspelling a word or name in the rule's criteria will prevent the rule from working as planned. In addition, deleting or stashing away unimportant messages on arrival carries the risk of never seeing important messages that may accidentally match the rule's criteria. It is therefore important to double-check the definition of every new rule and then to test it with great care.

Implementation: Setting up rules in a modern email application is fairly self-explanatory (in MS Outlook, this capability is called Rules; in Gmail and in Eudora, it is called Filters). At an organizational level, users should be taught (or encouraged to self-study) how to set them up. One should keep in mind that many users will be unaware of this feature's existence or usefulness unless instructed explicitly.

A useful rule tactic for recipients with not too prevalent first names is to look for their name in the message body, as in "If I'm on the CC list, move the message to the folder 'unimportant', unless <my first name> is in the message body".

♦ **Product: Skimbox – separates important incoming mail from the rest**

What: Skimbox (previously Gander) by Riparian Data is an email app for mobile devices that automatically sorts your incoming messages into two sections: those you need to act on ("Mainbox") and those you can just skim through, or ignore altogether ("Skimbox"). It uses your social graph, keyword cues, and past interactions with a sender to classify the messages, and learns to improve over time. Messages can be processed rapidly using touch gestures: swipe right to mark a message as done; swipe left to defer it; tap to open or edit.

Benefits: Separating the wheat from the chaff based on actual user behavior makes this a promising application. The fully mobile-optimized user interface makes it ideal for use on handheld devices, and unlike many mobile apps, the (promised) MS Exchange integration will make it relevant for enterprise users.

Caveats: It is advisable to seek the opinion of the IT group as to the security and reliability implications of this tool before introducing it into an enterprise environment.

Implementation: As of August 2013 this product is in closed Beta, and runs on iOS devices with Gmail and Google Apps email. A coming release will support Microsoft Exchange in an enterprise environment.

Vendor link: http://skimbox.co/

Email solutions are moving with the times

Skimbox is a good example of a new crop of email applications that are built from the ground up to be optimized for the reality of email in the new millennium.

Skimbox's mobile-only interface goes beyond the half-hearted attempts of the previous decade to allow some measure of access to email on a tiny screen; it takes full advantage of the iPhone's touch screen paradigm to unleash the strength of gesture based control. Meanwhile, the focus on Information Overload mitigation, built into the application's home screen and key functionality, recognizes the critical need today's users have for automated prioritization of messages.

We can expect to see more and more solutions in his space as vendors accept that email, an invention of the sixties, needs a major overhaul. Not all of them will succeed – Google Wave was

one brave early attempt at a new email model that went too far, and failed. But there is no lack of explorers in this territory, and some will make it. As a result email will be better, overload will be less, and knowledge workers worldwide will have a better quality of life.

More on this: http://bit.ly/IOCR054.

♦ **Product: Xonomail – classifies email into categories**

What: Xonomail is a mobile app that automatically classifies one's email into categories (e.g. Advertising, Travel, Social, Finance), adding a category icon next to each message. It can also display the messages clustered by category or by sender.

Benefits: Sorting the inbox into categories allows finding needed messages fast, and helps focus on urgent messages. In addition, the display of category and sender icons for each message improves speed and user experience when scanning the inbox.

Implementation: Xonomail supports most email clients (e.g. Gmail, Yahoo!, Hotmail, AOL), and runs on Android devices, with an iOS version in development. Enterprise Gmail and Exchange mail are not supported.

As of August 2013 Xonomail is in beta (available to users in the US only).

Vendor link: http://www.xonomail.com.

♦ **Product: ZeroMail – filters and classifies incoming mail**

What: ZeroMail is a service that combines human virtual assistants and automatic software to handle filtering and classification of a user's email. Incoming mails are screened automatically, with ones from personal contacts going directly to the inbox, others categorized by automated filters, and those that defy the automatic classification relegated (after personal details have been stripped from them) to the human virtual assistant team. These assistants work behind the scenes to ensure proper classification, for example by building personalized filters and checking the user's spam folder for misclassified real email.

ZeroMail comes with a web based email client designed for better productivity. This brings one's email accounts and social media together, enables turning emails into tasks, and has dedicated views for notifications, newsletters, mailing lists, etc.

Benefits: The use of human assistants to screen mail, once a basic part of business, has all but disappeared these days, yet it had much to commend it in terms of reliability and intelligent decision making. ZeroMail's combination of software and low-cost virtual assistants may enable these advantages without compromising privacy.

Caveats: The privacy assurance relies on the automatic software front end that shields sensitive information from the virtual assistants; the reliability of this shielding needs to be assessed.

Implementation: ZeroMail supports Gmail and Google Apps accounts. The email client is browser based.

Vendor link: http://zeromail.com.

♦ **Product: ZeroMail Gateway – classifies and manages incoming mail delivery**

What: ZeroMail Gateway is an enterprise product that that can identify email messages in numerous categories such as Shopping, Real Estate, Jobs, Social, and Travel. It allows you to set up for each group of employees detailed rules for how each category is delivered to them, for example "delay all Groupon and Social messages and deliver them after 5PM", or "Block all Survey messages entirely".

Benefits: This product gives an organization fine-grained control over what gets delivered to whom and when, so that counter-productive messages can be blocked or delayed to a time appropriate for their consumption. This goes beyond the crude all or nothing blocking behavior of most spam filters, and is easier to customize to employee expectations and company culture.

Implementation: ZeroMail Gateway is available both as a cloud (SaaS) solution and as a virtual appliance that can be placed behind the firewall. Since it filters the email before is reaches the mail server, it can work with any email server (Exchange, Lotus Notes, Google Apps, etc).

Vendor link: http://gateway.zeromail.com.

♦ **Product: Swingmail – filters email and facilitates rapid reply to it**

What: Swingmail is a mobile app that filters incoming messages in multiple Gmail accounts, Facebook, and Twitter and shows you only the important ones, based on your past history of

communicating with the senders. It consolidates your contacts across these services and allows you to rapidly read and reply to the messages on any service you choose. All activity is replicated in the original service (e.g., your Gmail account).

Benefits: By focusing on messages from contacts you've interacted with in the past, this tool removes a great deal of low importance mail and spam. The user interface is mobile-optimized and facilitates rapid cleaning of your inbox.

Caveats: This solution does not replace your full sized computer, because it doesn't allow you to archive mail, to compose new messages, or to send attachments. Thus, you can clean out only part of your message related tasks while using it on the go.

Implementation: Swingmail runs on iOS 4.3 – 6.0 with iPhone 4, iPhone 4S and iPhone 5. iPad support, Android and Web versions will be available in the future.

Vendor link: http://swingmail.co.

Swingmail takes an original approach in that it only permits you to act on the messages it displays with a Reply operation. Other actions, such as archiving, flagging, attaching files, changing the subject line, and composing new messages are unavailable.

The assumption, to quote the vendor's site, is that "By focusing on replying functions, Swingmail will provide services to efficiently send replies to high priority messages ... While away from your computer ... it is not practical to draft and compose a new message that requires more care and attention than replying to established contacts. Swingmail recommends to wait until you get to home or office and take the time on your PC to take care of new messages". In other words, rather than invest in a complex, fully functional mobile app, the complex actions are left for the PC and a lean, rapid tool is provided for use on the road.

♦ **Product: Inky – categorizes and sorts by relevance email from multiple accounts**

What: Inky is a "unified inbox" email client designed to facilitate prioritization of your email. It sorts the mail (which it can draw from multiple accounts) by relevance, and automatically creates "Smart Views" that display different classes of messages, such as social media notifications, newsletters and subscriptions. It also facilitates unsubscribing from the latter. Inky uses machine

learning algorithms to improve its classification based on your behavior over time.

Benefits: The combination of relevance sorting and unified inbox capability makes this a welcome tool in the desktop client space.

Implementation: Inky is a desktop client for Windows and Mac, and supports POP and IMAP based services such as Google, Microsoft, Yahoo! and Apple email.

Vendor link: http://inky.com.

♦ **Product: KeyMails – prioritizes the MS Outlook inbox**

What: KeyMails by Colimetrics Software automatically sorts the MS Outlook inbox into three sections: "Important and Unread", "Important and Read", and everything else. The classification is based on content, send/receive patterns over time, and optionally also on explicit indication by the user. There is also an option to "snooze" messages – hide them until a specified time.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: This is an add-in for MS Outlook 2010 on Windows XP and Windows 7 (both 32-bit and 64-bit versions). It works with POP, IMAP, Microsoft Exchange Server, and Google Apps Sync accounts.

Vendor link: http://www.keymails.com.

♦ **Product: Mailstrom – classifies a full inbox to facilitate emptying it**

What: Mailstrom by 410 Labs analyzes your Inbox (which can take a while, if it's heavy with messages) and then shows you its contents arranged by a variety of groupings – by subject, by size, by sender, by age, by source (subscriptions, social media, etc) – all this in an interface that makes the mail very easy to browse and manage. This allows you to get a handle on your inbox and to delete or archive messages rapidly to attain "Inbox Zero".

Mailstrom also facilitates unsubscribing from lists, and displays indicators showing how many emails you've received, how many you've deleted and how close you are getting to the goal of "Inbox Zero."

Benefits: For anyone who faces an inbox with hundreds or thousands of accumulated messages, this solution provides an

effective alternative to just deleting everything, as in "Email Bankruptcy" (q.v.), or giving up and retaining the whole mess.

Implementation: Mailstrom works with Gmail, Apple, AOL, Yahoo!, Google Apps Email, and any other email service that supports IMAP.

As of August 2013 this solution is in beta.

Vendor link: https://mailstrom.co.

♦ **Product: Swizzle – summarizes and removes commercial messages**

What: Swizzle helps you cope with marketing email messages, such as offers for commercial goods and services. It scans your inbox and highlights such messages for you, allowing you to choose which ones to unsubscribe from, and which ones to add to your daily digest. The latter will in future be delivered in a single daily summary that replaces the individual messages.

Benefits: For people who tend to subscribe to an abundance of marketing mail, this tool can be a real help by permitting them either to scale back and unsubscribe, or to batch these mails together for convenient reading. Receiving a single email regardless of how many subscriptions you follow can seriously declutter the inbox.

Implementation: Swizzle supports Gmail, Google Apps, Yahoo! Mail, AOL, Mac.com, Outlook.com, Hotmail.com, LiveMail.com and Me.com.

Vendor link: https://theswizzle.com.

♦ **Product: Cloze – prioritizes communications from people that matter**

What: Cloze learns from your email and social media interactions and deduces which people are most important to you. It then prioritizes communications from these people (from email, Facebook, Twitter and LinkedIn) and shows them at the top of its view. The underlying philosophy is to   organize the display of all communications around people and their real importance to the user.

Benefits: The focus on people (contacts) as the primary entity is an interesting departure from the usual model that sorts messages by time or by channel. In addition to helping focus and prioritize, it

can help generate insight about your relationships with the people you communicate with.

Implementation: Cloze is available as a web client and as a mobile app for iOS. It supports Exchange Web Services / Outlook Web Access, Gmail, Yahoo! Mail, AOL and any email service that supports IMAP.

Vendor link: http://www.cloze.com.

♦ **Product: The tabbed inbox in Gmail**

What: A new Gmail feature introduced in 2013, the tabbed inbox automatically sorts incoming messages into categories that are displayed in separate tabs. Default categories are "Primary", "Promotions", "Social", "Updates" and "Forums"; more can be added by the user. The user can correct classification errors and instruct the system to send future messages from a given sender to a specified tab.

Benefits: The main advantage from an IO perspective is that by moving messages of lower importance (subscriptions, promotions, etc) out of the primary tab, the more important, actionable messages are more visible and can be processed faster.

Caveats: There is a risk that messages will be misclassified into the wrong tab, possibly delaying their handling. It is therefore recommended to keep an eye on all tabs and correct the system when it made a mistake, thereby improving it over time.

Implementation: This is a built-in feature of Gmail, and can be customized (or deactivated altogether) in the settings of this tool.

♦ **Product: SaneBox – moves unimportant messages away from the inbox**

What: SaneBox uses both filtering algorithms and user-trained preferences to spot user-specific important emails. It moves the other, unimportant messages into a separate folder, and summarizes them in a digest for review at a later time. Additional features include deferral of messages until a specified time, alerting if no reply is received for a sent message by a specified time, marking an unwanted sender for deletion of all their future messages, and more.

Caveats: As with all tools that interface with internal email, it is advisable to seek the opinion of the IT group as to the security and reliability implications of this solution before introducing it into an enterprise environment.

Implementation: SaneBox is a cloud-based service, and works most anywhere you read your email: Gmail, Exchange, Yahoo!, AOL, Apple Mail, Outlook, iPhone, Android – any IMAP or WebDAV email account. POP-only accounts (e.g. Hotmail) are not supported.

Vendor link: http://www.sanebox.com.

♦ **Product: Alto – aggregates and organizes email into "stacks"**

The concept of Stacks in Alto is inspired by the way people sort through incoming paper mail – by stacking it in piles based on the type of letter.

What: Alto by AOL is a web-based email client that automatically organizes your email (from multiple accounts) into "stacks" devoted to specific categories of email and email components: daily deals, social media notifications, photos, attachments, and more. You can also create your own stacks for mail from specific senders or containing specific content, and you can have all future matching messages go to that stack, with or without appearing in your main inbox. The user interface is slick and intuitive, facilitating easy browsing of the content of your stacks; a powerful search feature allows you to find content fast.

Benefits: This is a very modern implementation of an email organizer, with a number of appealing features for making sense of your mail.

Caveats: The design is geared more for personal than for business use, a fact visible in the liberal allocation of screen real estate to graphics and white space.

Implementation: Alto works with AOL, Gmail, Google apps, Yahoo!, iCloud and other providers that support IMAP.

Vendor link: http://www.altomail.com.

♦ **Product: Glider – filters commercial emails away from the Gmail inbox**

What: Glider filters two kinds of emails into two new labels in Gmail: Notifications and Newsletters. You can also specify that messages from specific commercial senders be kept in the inbox. It also provides information on your time spent in Gmail.

Benefits: The intent is to minimize distraction and keep the inbox for messages from actual human contacts, which are naturally the more urgent ones.

Implementation: Works with Gmail.

Vendor link: http://www.glider.io.

♦ **Product: Boxbe – stops spam by using white- and black-lists of senders**

What: Boxbe stops incoming spam by screening incoming mail based on a "Guest list" of approved senders and a "Blocked list" of forbidden senders defined by the user. Mail from people not on either list is held until the sender goes through a verification step confirming they are a human being and not a spambot.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix; also note the controversy around what some experts consider to be malware-like behavior of this tool, at http://bit.ly/IOCR012.

Implementation: Works with Gmail, Yahoo! Mail, AOL Mail, and domains hosted by Google Apps.

Vendor link: http://www.boxbe.com.

♦ **Product: ClearContext Pro – a comprehensive toolkit for email management**

What: ClearContext Pro analyzes messages to deduce their importance and context, then highlights important messages, files away less important messages, organizes messages by the projects they belong to, and provides many other useful features to make email, calendar and task processing focused and fast. A "Do not disturb" button (q.v.) which disables interruptions for a specified time is also provided.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: This is an add-in for MS Outlook 2003–2013 on Windows XP, Vista, 7 or 8, with Exchange or POP access.

Vendor link: http://www.clearcontext.com.

♦ **Product: Zoomin – prioritizes and summarizes incoming mail**

What: Zoomin detects important messages in the inbox and separates them from the rest. It displays the messages with photos of the senders, and provides automatically generated summaries. It also provides reusable canned responses.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Zoomin is both an add-in for MS Outlook (2007 and 2010, on Windows XP, 7 and 8, with Exchange 2007/2010), and

a standalone mobile application for iOS devices. The desktop and mobile versions stay synchronized.

As of August 2013 the application is in beta.

Vendor link: http://www.zoominmail.com.

♦ **Product: EmailTray – aggregates and prioritizes mail from multiple accounts**

What: EmailTray (previously SenderOK) is an email client that aggregates new mail notifications across email accounts. It analyzes your past actions, as well as interconnections between email senders, to rank incoming emails by importance. A tray icon shows the presence and priority of unread messages in any of your personal and corporate email accounts, and alerts you only to the important messages, minimizing distractions and the need to keep checking the Inbox.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Supports Hotmail/Live, Gmail, Yahoo!, AOL and POP3/IMAP accounts on Windows XP, Vista and Windows 7. An Android mobile version is available.

Vendor link: http://www.emailtray.com.

♦ **Product: Gmail Smartlabels – detects and classifies mass mailed email**

What: This Gmail feature automatically classifies incoming *Bulk*, *Notification* or *Forum* messages, labels them with these categories and (by default) moves *Bulk* messages out of the Inbox.

Caveats: As a *Google Labs* item, this feature is available as of mid-2013 to Gmail users but is not guaranteed to remain in place.

Implementation: This is an integrated feature in Gmail.

Vendor link: http://bit.ly/IOCR013.

♦ **Product: InLook – automatic email prioritization and processing support**

What: InLook Time Management automatically prioritizes your emails and meetings; helps with message archiving (automatically or by providing smart suggestions); facilitates one-click message processing (including options to defer or schedule email handling); provides analytics of how you spend your time; and more.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2007, 2010, 2013.

Vendor link: http://www.inlooktm.com.

♦ **Product: Nelson Email Organizer – organizes, prioritizes and searches email**

What: Nelson Email Organizer by Caelo is an Outlook add-in that catalogs, prioritizes and displays your emails in a large variety of views – by date, sender, attachment, and more. It provides powerful search functionality beyond the native Outlook capabilities.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 98, 2000, 2002 (XP), 2003, 2007 and 2010 (32 bits) and all versions of Exchange Server, on Windows 98, ME, NT, 2000, XP, Vista, or Windows 7.

Vendor link: http://www.caelo.com.

♦ **Product: Organizer – moves unimportant messages away from the inbox**

What: Organizer by OtherInbox scans the inbox and automatically moves less important or mass-mailed messages to folders. It also generates a daily digest that summarizes what's been organized during the previous day.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with Gmail, Yahoo! Mail, Outlook.com and AOL mail.

Vendor link: http://www.otherinbox.com/organizer.

♦ **Product: Priority Inbox for Gmail – classifies and prioritizes email**

What: This built-in Gmail feature automatically sorts your Gmail inbox into "sections" you define (by default: *Important and unread*, *Starred*, and *Everything else*). Importance is derived from your past behavior, and you can also train the algorithm manually.

Implementation: This is an integrated feature in Gmail.

♦ **Product: Sweep – batch processing for the inbox**

What: The Sweep feature in Outlook.com by Microsoft (previously Hotmail) allows you to apply various processing options to batches of messages – e.g. all messages from a given sender, or all messages belonging to a given class, such as newsletters, commercial promotions, or messages containing photos. You can choose to move such a batch of messages to a folder, delete them, or even keep the latest (newest) message in a class and dispose of the rest. You can also have Sweep repeat this action for all future messages of the same kind.

Caveats: In order to prevent classification errors – resulting in the occasional deletion of an important message – it would be advisable to have Sweep move messages to a folder rather than delete them outright.

Implementation: This is an integrated feature of Microsoft's online mail service, Outlook.com.

Vendor link: http://bit.ly/IOCR037

1.4. Support for filing incoming email

♦ **Product: Tagwolf – facilitates rapid filing of email**

What: Tagwolf by Allometa facilitates rapid filing of messages by suggesting the best folder for each message, based on content analysis and observation of your past filing behavior. It can also identify groups of related messages (e.g. by conversation thread or by topic) and allow you to file all of them in one action. A Task Pane is used to show folders in tag clouds and other views.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2003, 2007, and 2010 or 2013 (32- and 64-bit).

Vendor link: http://www.tagwolf.com.

♦ **Product: QuickFile for Outlook – facilitates rapid filing of email**

What: QuickFile for Outlook by Standss facilitates speedy filing of messages by suggesting the destination folder for any given

message based on your past filing habits. It also enables faster searching for folders.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2000, 2002/XP, 2003, 2007, 2010 and 2013 (32 bit), on all versions of Windows up to Windows 8.

Vendor link: http://www.standss.com/quickfile/.

♦ **Product: SpeedFiler – facilitates rapid filing of email**

What: SpeedFiler by Claritude software facilitates rapid manual filing of incoming and outgoing email into folders. It adds a toolbar that makes finding the right folders and assigning messages to them much faster than Outlook's native capability.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2003 and 2007 on Windows 2000 Professional, XP, 2003, or Vista.

Vendor link: http://www.claritude.com.

♦ **Product: Mail Manager – improved filing and search for MS Outlook**

What: Mail Manager by Oasys Software is an Outlook add-in that provides considerable enhancement to the operations of filing and searching for messages. It facilitates filing and learns from your behavior over time to suggest the filing location. Its search tool is more powerful, flexible and fast than the native Outlook search.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: This is an Outlook add-in, and also has a BlackBerry mobile version. Interestingly, it files the messages outside the Exchange system's folders and PSTs, saving them as .msg files on your local hard drive or in your shared team storage space.

Vendor link: http://bit.ly/IOCR052.

♦ **Product: Decisiv Email – automatic enterprise email storage and retrieval**

What: Decisiv Email by Recommind provides automatic categorization and tagging, efficient filing and storage, and simple retrieval of email-based information. Upon sending or receiving an email the system automatically assesses both the content and the parties involved in the communication, then files the message itself – or prompts the user to file it – in the appropriate folder. All messages are stored in a secure and scalable folder architecture, and are searchable and accessible to (authorized) employees across the company.

Implementation: This is part of a comprehensive suite of heavy duty email and information management products, primarily targeted at large enterprises that typically also need to address legal requirements around e-discovery and compliance while managing large quantities of email.

Vendor link: http://bit.ly/17AqckH.

1.5. Other Inbox processing solutions

♦ **Product: Handle – a task-centric email management system**

What: Handle defines itself as a "Priority engine". It addresses the fact that many incoming emails represent tasks that need to be processed, so triaging the inbox is in large measure a matter of task-and-time management. A "Handle bar" facilitates converting messages into tasks, assigning to each an urgency and timing constraints; messages can be hidden until they need to be worked on, and a daily calendar can be populated with tasks based on their urgency. The assignment of priorities is not automatic, but their definition by the user is very rapid and convenient.

Benefits: This elegant application recognizes the often neglected fact that clearing the inbox is just half the equation, the rest being work on the inherent tasks it brings in. Its original approach to email as a set of tasks, and its well thought out interface, mark it as a promising IO solution.

Caveats: As of August 2013 this tool is in private beta, and some features are still missing (notably search).

Implementation: Handle is a browser based web application, and also has a mobile iOS version of somewhat reduced capabilities. As of August 2013 it works with Gmail, with support for other services in the works.

Vendor link: https://www.handle.com.

♦ **Product: Unified Inbox – an email and social media collaboration platform**

What: Unified Inbox is a conversation and social collaboration platform that centralizes external messaging, social engagement and internal team collaboration into a single platform across desktop and mobile devices. It aggregates incoming messages from all one's email and social media accounts in a single inbox, and enables numerous workflow management actions on the tasks implicit in them.

Benefits: Two major benefits of this application are the ability to process all traffic – multiple email accounts, Facebook, LinkedIn, SMS, Voice Mail and more – in a single application; and the powerful collaboration features that facilitate the smooth move from messaging space to task management space across one's team.

Caveats: As with all tools that interface with internal email, it is advisable to seek the opinion of the IT group as to the security and reliability implications of this solution before introducing it into an enterprise environment.

Implementation: Unified Inbox is a web-based program accessible on any device with internet access. As of August 2013 the application is in closed beta.

Vendor link: http://www.unifiedinbox.com.

♦ **Product: LeanMail – facilitates email prioritization and processing**

What: LeanMail by Atrendia adds functionality to the Outlook inbox that helps you to prioritize, file and process messages and the tasks they carry. It adds controls that you use to assign priorities to messages, and allows you to enter for each message action items ("next steps") and the time they're due, and to display a prioritized list of pending actions. Atrendia complements this product with training courses in email processing methodology based on Lean Six Sigma principles.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2003-2013.

Vendor link:
http://leanmail.com/outlook-productivity/leanmail.aspx.

♦ **Product: Xobni – provides a people-centric view of email**

What: Xobni ("inbox", spelled backwards) is an add-in for MS Outlook that adds fast search and people-based navigation of a user's email archives. Among other things it displays copious information about people, messages and attachments related to the message being examined in the Outlook inbox. Xobni is offered in personal and enterprise versions.

Implementation: Works with MS Outlook 2003, 2007, 2010, on Windows XP, Vista, or 7.

Note: In July 2013 Xobni was bought by Yahoo!, and it can be expected that its capabilities will be integrated into Yahoo! Offerings and will eventually be phased out as independent products.

Vendor link: https://www.xobni.com.

♦ **Product: Sperry Add-ins for Outlook – a collection of productivity tools**

What: Sperry Software provides an extensive collection of add-ins that extend the functionality of MS Outlook in many different ways, including some relevant to IO reduction. There are 43 add-ins in all, and each can be purchased and used separately.

Check the full list of add-ins on the Sperry site.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2000 through 2013.

Vendor link: http://www.sperrysoftware.com/Outlook.

♦ **Product: Trog Bar – an automated task and email priority manager**

What: Trog Bar by Priacta is an Outlook sidebar that facilitates mail and workload processing in the context of task management. It automatically prioritizes your task list, email, and calendar and recommends which task to work on next.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2003, 2007, or 2010, on Windows XP SP2, Vista, or Windows 7.

Vendor link: http://www.priacta.com/trog.

♦ **Product: Orla – facilitates rapid processing of the inbox**

What: Orla is an email management and workload organizing program that encourages and facilitates rapid processing of incoming messages and their integration into tasks and appointments. It highlights the concept of opening each mail only once and taking immediate action, using the 4 D's: Ditch, Deal, Delegate and Decide.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Works with MS Outlook 2003 and 2007.

Vendor link: http://www.orla.org.

Note: As of mid-2013 Orla is no longer available commercially or supported, but you can get the free version for Outlook 2003 and 2007 by writing a request to its creator, Stephen Barnes, at sbarnes@orla.org.

♦ **Product: Mailbox – an iOS Gmail app**

What: Mailbox is an app for the iPhone and iPad that presents your Gmail inbox in a sleek interface designed for rapid processing. It supports combining multiple accounts in one inbox, and applies the gesture interface to good effect: swipe a message a little to the right to archive it; swipe it further to the right to delete; swipe it a little to the left to defer ("snooze") it till a specified future time; etc.

Benefits: The set of features and the UI design enable faster email processing, making this a compelling replacement for the standard Gmail inbox.

Implementation: Mailbox is an app for the iPhone and iPad. As of August 2013 it works with Gmail, with support for other devices and clients planned for future development.

Related links: http://www.mailboxapp.com.

♦ **Product: Syntomo – presents email as concise, clear conversations**

What: Syntomo helps you process your email faster by presenting it in a concise and clear format, hiding irrelevant elements like headers and signatures, and showing entire email threads as chat-like conversations. Conversations can be managed as single entities through a variety of functions. The technology is currently used for an Android Email client application and an Outlook add-in.

Benefits: The Syntomo display provides a full view of a conversation, letting you follow its flow and access any of its elements with a click. This is especially useful on mobile devices, where scrolling through cluttered messages is a serious productivity limiter. The tool does not use an external server, thus avoiding privacy risks.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: A mobile app client (MailWise) for Android is in closed beta as of September 2013. Also available in closed beta as an add-in for MS Outlook 2007 and 2010, running on Windows XP, 7 or 8.

Vendor link: http://www.syntomo.com.

♦ **Product: Mail Pilot – an iOS email app**

What: Mail Pilot by Mindsense is an email client for iPhone and iPad that incorporates numerous IO-reducing features, including deferring messages for future handling, a focus on messages as tasks, thread display and management, and batch actions on groups of messages. It can also unify email from different services in a single inbox.

Benefits: This is one of the new crop of email apps designed from the ground up for mobile use and for effective coping with information overload.

Caveats: It is advisable to seek the opinion of the IT group as to the security and reliability implications of this tool before introducing it into an enterprise environment.

Implementation: Mail Pilot is an app for iPhone and iPad and is compatible with email accounts that offer IMAP access, including Gmail, iCloud, Yahoo!, AOL, and others. It can also work with some MS Exchange servers that support IMAP.

Vendor link: http://www.mailpilot.co.

♦ **Product: ActiveInbox – enables application of GTD principles in Gmail**

What: ActiveInbox facilitates applying the "Getting Things Done" methodology within the framework of Gmail. It adds to Gmail functionality that focuses on processing messages as carriers of tasks. It allows you to convert messages into tasks (and aggregate these within projects), to set deadlines for the tasks, to review activities required in accordance with these deadlines and projects, and more.

Implementation: Available as an extension for the Firefox and Chrome browsers.

Vendor link: http://www.activeinboxhq.com.

♦ **Product: Boomerang – a snooze button for email**

What: Boomerang by Baydin Software acts like a snooze button for an email message. It allows you to make any message in your inbox disappear for a time you specify, and reappear (optionally flagged for follow up) when you need to act on it.

Benefits: This tool facilitates compliance with the key teaching "Never use your inbox as a To Do list". Instead of having it clogged with messages waiting for action at a future date, you can use the inbox for new and actionable messages only.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: Boomerang comes in two versions, one for MS Outlook (2003, 2007, 2010 and 2013) and one for Gmail. The Gmail version has the additional functionality of permitting you to compose a message and schedule it for sending later, and of alerting you if no timely reply is received to a message you sent out. A mobile version for Gmail also exists.

Vendor links:

For Outlook: http://www.baydin.com/boomerang.

For Gmail: http://www.boomeranggmail.com.

♦ **Product: NudgeMail – an email-based message snoozer and reminder**

What: NudgeMail allows you to defer emails to a later time, and to set up reminders for your future attention, by sending email to the NudgeMail service. You simply forward the message to

nudge@nudgemail.com, and set the *Subject* to specify the time you wish to have it sent back to you, e.g. "Monday" or "Oct 13" or "2 hours". Alternatively you can specify the time in the *To* field, as in "tomorrow@nudgemail.com" or "feb12@nudgemail.com".

Benefits: This tool facilitates compliance with the key teaching "Never use your inbox as a To Do list". Instead of having it clogged with messages waiting for action at a future date, you can use the inbox for new and actionable messages only.

Caveats: NudgeMail does not support attachments. If you send it an email with an attachment, it will warn you to hang on to it on your local machine.

Implementation: This product doesn't require any installation, and works with any email service or client, since it interacts with the user entirely by sending email back and forth.

As of September 2013 this product is in private beta.

Vendor link: http://www.nudgemail.com.

♦ **Product: Hiri – an innovative enterprise email client**

What: Hiri is an <u>enterprise</u> email client designed from the ground up to help get email under control. It focuses on the distinction between emails that bear actionable To-Do items and those that are FYI (as specified by the sender), delivering them into separate inboxes accordingly, and enabling tracking of the To-Do tasks within the email application. It also provides a dashboard that shows the quality of one's sent emails in terms of brevity, clarity and tone – based on feedback solicited from recipients.

Benefits: In addition to the obvious benefit of separating actionable from FYI mail, the recipient-driven quality dashboard could drive change in outgoing mail quality, a notoriously elusive goal. Whether recipients will cooperate remains to be characterized.

Caveats: As with all tools that interface with internal email, it is advisable to seek the opinion of the IT group as to the security and reliability implications of this solution before introducing it into an enterprise environment.

Implementation: Hiri is in private beta as of August 2013.

Vendor link: http://www.hiri.com.

♦ **Product: Inbox Pro – asks senders to classify their own messages**

What: Senders of email to a user of this tool receive an automatic reply that informs them how long they can expect to wait for an answer (based on the recipient's average past record), and invites them to optimize their email by following a link and categorizing it as a Yes/No Question, an FYI Message, a Short Message or a Long Message, noting how long each class takes to get a reply. The sender can classify the message, and the recipient's inbox sorts its content according to these classes. This helps the recipient prioritize their email processing.

Inbox Pro also has an 'Expire' function: after a certain time an email has gone unanswered, it will be moved to an 'Expired' folder and the sender will be notified, giving them the option to change the message's format, move it back into the queue or delete it.

This is an audacious attempt to replace the basic "Launch & Forget" paradigm of email with a mutually beneficial "negotiation" between sender and recipient.

Benefits: The idea here is that the sender is in the best position to classify their message, and by doing so to facilitate efficient prioritization at the receiving end. In return, the system allows the sender to know when they will get a reply, and encourages them to compose messages that get read sooner (notably Yes/No messages).

Caveats: Whether senders will appreciate the fact that they receive an extra email for each one sent remains to be seen.

Implementation: As of mid-2013 this solution is in closed beta.

Related links:

Detailed description by the developer: http://bit.ly/IOCR036.

Beta signup: http://inboxpro.com.

♦ **Product: RepriseMail – highlights email usage patterns**

What: RepriseMail by Reprise Apps is a diagnostic tool that collects individual users' email behavior metrics and produces reports, at both the individual and the group level, that help identify improvement opportunities.

Parameters monitored include quantity of email, processing time, and a variety counter-productive response time patterns; these are compared with average values to help identify good and bad email performers.

Benefits: The information provided is commendably focused on productivity-related patterns, for example the frequency with

which a given email is re-opened numerous times. Exposing such parameters and their trends in time can help users and managers drive valuable improvement.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: The product consists of an Add-in for each user's MS Outlook client, which sends (non-confidential) scoring metrics to the vendor's server.

Vendor link: http://www.humanisys.com.

♦ **Use a Threaded Inbox view**

What: view messages in the inbox in a threaded representation, which shows the messages grouped by conversations (threads) rather than chronologically.

Benefits: Seeing all the messages in a conversation grouped together allows one to navigate the conversation much more effectively, see who replied to whom, and skip dated messages that are subsumed in later ones. Overall this can be a great time saver.

Implementation: Some email clients have the capability built in. MS Outlook has an "Arrange by Conversation" view, while Gmail is designed to group conversations together as a key feature (which can, however, be overridden by a user setting).

Neither of these platforms, however, can show the real flow of the conversation in terms of who answered whom – that would require a tree view. Designing an optimal threaded view is a long standing problem in Computer / Human Interface design (see the link below for a paper discussing some concepts).

Related links: *Understanding Sequence and Reply Relationships within Email Conversations: A Mixed-Model Visualization* by G. Venolia and C. Neustaedter, Microsoft Research: http://bit.ly/IOCR023.

♦ **Product: The Email Game – turns emptying the inbox into a game**

What: The Email Game by Baydin Software turns emptying the inbox into a game. It presents each message to the user with a countdown timer; one gains points for dealing with the message in time, and loses points for exceeding the time limit.

Benefits: Making the burdensome task of clearing email into a game-like activity can encourage the user to do it faster (and have fun, thereby reducing the stress).

Caveats: Since this application pulls the messages from your mail application, security implications should be evaluated.

Implementation: The free version works with Gmail and Google Apps; an enterprise version works with MS Outlook/Exchange or IMAP accounts and provides additional capabilities.

Related links:

The Email Game: http://emailga.me.

Article describing the game: http://bit.ly/IOCR025.

♦ **Use an assistant to screen incoming mail**

What: Have a human assistant screen your incoming email. This is a classic function of an admin or secretary from pre-email days – to process the boss's mail.

Benefits: The personal computing revolution has eroded this practice in all but the highest management levels, but it should at least be considered as a viable method to get back time.

Caveats: Requires a relationship of trust, especially when there are personal or confidential messages involved.

Variations: Users not working in a large enterprise should consider the possibility of engaging a VA – a Virtual Assistant working remotely – to do this task. ZeroMail (q.v.) combines this option with software automation to get the best of both worlds.

♦ **EmailValet: use crowdsourced assistants to convert email to tasks**

What: EmailValet, a concept developed and tested by Stanford University HCI researchers, manages email overload through an email client that recruits remote assistants from an expert crowd sourcing marketplace. The user gives access to their inbox to these remote assistants, and they extract tasks from the messages into a To Do list in the EmailValet client. To address concerns of Privacy and Accountability, the user can limit which emails the assistant may see, and the assistant's actions are logged for the user's scrutiny.

Benefits: According to the research paper, use of this setup doubled the task completion rate of its users.

Caveats: Giving access to one's inbox to a crowd sourced assistant is a decision not to be taken lightly, although the study showed that people grew more comfortable with this over time. For email within a company this may not be an option at all (unless the assistants were company employees or contractors).

Implementation: The version tested was integrated with Gmail.

Related links: Stanford research paper: http://stanford.io/1dmELO9.

2. Solutions that reduce the *Quantity* of email

This category includes solutions that aim to stem the flood of email messages at the source, either by completely eliminating some of the messages, or by shunting them to channels other than email when this would improve overall effectiveness.

2.1. Bans, Quotas and Postage charges on email

♦ **Limit by quota a sender's outgoing messages**

What: Decree and enforce a quota of how many messages a given person may send per day.

Benefits: Guarantees a limit on traffic originating within the group.

Caveats: This approach may be too simplistic: given the great variation in job types and the related mailing requirements, it takes considerable tweaking of the quotas to get a workable system. At a minimum, one would have to allow for different quotas by job type and other employee characteristics, as well as a waiver mechanism where a manager could authorize exceeding the quota when required.

Implementation: To manage and track the quotas it is necessary to have server software interacting with the email server, and client-side software alerting users to their quota balance.

Existing cases: One notable attempt to create a product in this space was *Postware*, introduced in 2007 by *Get Back Software*, a short lived US startup. It allowed a manager to assign "postage" quotas to each subordinate individually, and blocked sending mail in excess of that quota. This product is no longer available.

Variations: A recommended variation would be to count not outgoing messages but rather total recipient count, which would encourage keeping distributions small.

Postware's tagline was the thought provoking "When email costs... you save". Interestingly this applies better to the solution of charging postage (q.v.), which is not what Postware was doing.

It could be interesting to add the ability to "buy and sell" quotas, similar to the concept used for carbon emissions.

Related links: Postware press release: http://bit.ly/IOCR001

♦ **Charge postage on email**

What: The tragedy of email is that it is practically free. If there were even a small charge on each message, as with paper mail, mailing could be restored to sane proportions (an effect seen in many other domains, e.g. the consumption difference between free and partly subsidized coffee in the workplace).

Note: this solution refers to <u>internal</u> company messaging, not to external internet email (although the idea of charging for the latter as a means of spam control has been debated on occasion in academic circles).

Benefits: A strong incentive for departments to police themselves and apply serious effort to reduce email generation to what is truly necessary.

Caveats: Users may be pushed to replace email with other channels (or free external mail services). This can be a good thing in some cases – when the new channel is more suited to the interaction – but could also have negative ramifications. A close watch should be kept on what is happening in the aftermath of implementation.

Implementation: Since this must be implemented at an organization level, it becomes one more detail of the IT chargeback model. Technically it requires measuring the amount of mail sent by a department, so that the charge may be assessed, but one should also provide department managers with detailed data (e.g. traffic breakdown by user), to allow them to understand on which senders or processes they can focus reduction efforts.

Variations: A recommended variation would be to count not outgoing messages but rather recipient count (i.e. one "postage stamp" per addressee), which would encourage keeping distributions small.

The charge might also be applied only to specific situations, e.g. for use of large mailing lists ("all employees" and the like).

Bob Crow, a trade union leader in the UK, suggested in 2011 that emails should be subject to taxes in order to pay off the national deficit. Although this was never considered seriously, it did draw

some attention to the huge volume of email messages in the country – and to the fact that they're practically cost-free.

♦ **Charge senders for prioritized access to recipients**

What: Implement a system where a sender can pay a charge to have their message show at higher visibility in the recipient's inbox queue. The charge may vary based on the identity of the sender and the recipient (e.g., the less close they are, and the more sought the recipient, the higher the charge). Unpaid messages may still be delivered, but to a lower position in the queue (e.g., to an "Unimportant" folder).

Benefits: This is useful primarily as a spam filtering method. Any requirement to pay will deter spammers, while still allowing a stranger to get through if they deem it important enough to pay.

Implementation: This would need to be implemented across an entire messaging system, at the system's infrastructure level.

Variations: The charged fee could go to the email provider (as done by Facebook – see below), or to the recipient. If the latter, the recipient could be allowed to set their own fee scale.

Existing cases: This unusual scheme was tested by Facebook in 2013, and attained some publicity when they used a "Pay $100 to message Mark Zuckerberg" approach. The intent was that friends can message each other's primary inbox for free, and strangers – whose messages normally go to an "Other" folder – could pay a fee to have the message go to the primary inbox, with the fee ranging from about $1 to $100 depending on the recipient's fame (and therefore, state of overload).

Related links: An analysis of the Facebook experiment: http://slate.me/17Ps7Gf.

♦ **Vary personal rates or quotas to reflect behavior**

What: This is a more advanced application of the concept of using postage charges or quotas on email. The idea is to make each sender's cost per message, or daily message quota, vary in time based on the individual sender's behavior in the preceding period. Examples may be to reduce the rate if this sender has been sending less messages, or shorter messages, or ones to smaller distributions, or ones with higher message quality as measured by various indicators.

Benefits: The incentive to the sender to act responsibly now becomes more personal and immediate; and irresponsible senders actually get penalized.

Caveats: Implementing automatic monitoring of message quality is complex and prone to errors.

Variations: The measurement of sender behavior can be based either on cumulative behavior over time or on a rolling ("last X weeks") model.

Implementation: At present there are no known tools for applying such a system. Should one be developed, it is important to provide to the sender (and possibly, though not necessarily, to their manager) insight into why the system judges their sending behavior as good or bad.

♦ **Ban certain emails by management edict**

What: Have management impose limitations on sending specific types of email entirely. Example: "No Jokes/YouTube videos/etc may be disseminated by email in our department".

Benefits: If defined wisely, can eliminate many useless emails at practically no cost.

Caveats: If not defined wisely – which can happen if a manager is so upset as to succumb to a knee-jerk reaction – this can lead to unrealistic bans (for instance, a ban on personal emails) that are perceived as ridiculous by employees and are not adhered to.

Implementation: Seemingly trivial, but if the ban is to take hold without requiring a cumbersome monitoring effort, users must be on board – meaning it is best to apply this after a team meeting where the email overload issues are discussed and the rationale of the ban is accepted by the group.

Variations: One can enlist employees to do grassroots enforcement, i.e. enact team agreements that will legitimize and encourage recipients to respond to violations of the ban by criticizing the violator.

Existing cases: A ban on jokes and other trivia has been enacted successfully by a start-up company in Israel. This was complemented by opening an Intranet location for posting the jokes.

♦ **Declare "email amnesty" for your employees during holidays**

What: Instruct employees to avoid sending work email during holiday periods.

Benefits: In addition to the benefit to their quality of life, this original move is sure to send a powerful message – that management cares – to the employees involved.

Caveats: Unless everyone in the company complies at once, employees who do will return from the holiday to a bursting inbox.

Existing cases: The German company Henkel, maker of Persil washing powder, declared in 2011 an "email amnesty" for its workers between Christmas and New Year, saying messages should only be sent out as an emergency measure.

Related links: http://bit.ly/IOCR042

Note that Henkel's CEO is quoted as firmly supporting and role modeling the behavior. Such leadership from the top is invaluable in such behavior-changing solutions.

2.2. Reduction of distributions

♦ **Remove the Reply to All (RTA) button**

What: Remove or disable the *Reply to All* button in the email client interface.

Note: this does not necessarily disable the function – it can be kept accessible via a menu item or shortcut key; and even if disabled completely it can always be simulated by the work- around of cutting and pasting the addresses. However, the absence of the button in its customary position suffices to jar people out of automatically effecting the RTA, and gives them an instant to consider what they're doing.

Benefits: Given the frequent abuse of "Reply to All", disabling this feature solves a pressing problem and can definitely eliminate unneeded replies to huge lists.

Caveats: This is a solution that tends to draw strong opposition and disdain, much of it emotional (along the lines of "management is treating us like children"). There is also the valid concern that some situations do require using RTA. It is important to communicate the rationale and to stress the available workarounds for legitimate use.

Implementation: In MS Outlook, the RTA button can be removed by customizing the toolbar, and this can also be done centrally ("down the wire") for all users by the IT group. It is recommended not to eliminate the function itself, only the actual toolbar button.

In years of surveying and interviewing corporate users, the author has found that abuse of "Reply to All" is perceived almost universally as the most hated email behavior.

This is quite easy to do; the difficult part is communicating the change to prevent user resistance.

Variations: If removing the button altogether gives the organization cold feet, it may also be useful if the button is moved to the end of the toolbar, away from the "Reply" button. Not finding it in its accustomed place may delay the user just long enough to rethink the action.

Existing cases: A well known implementation was done by the Nielsen Company, where the RTA button was grayed out in 2009 for all 35,000 employees based on an executive council decision; as of 12/2012 this remains in effect. The author has encountered three other implementations, one in a large group (300 people) at an Insurance company, another at another financial company, and one at Ceragon, a global hi-tech company of some 1200 people. In all three cases results reported were satisfactory and a reduction in email traffic was reported.

♦ **Intercept at the source messages to large distributions**

What: Intercept messages about to be sent to more recipients than a predefined limit. Clicking "Send" on such a message will pop up a dialog box displaying the recipient count and requesting confirmation whether to send anyway or abort.

Benefits: This functionality can give senders pause to reconsider, and would reduce thoughtless email blasts.

Caveats: See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept the Send click and present the required dialog. The decision of what constitutes a "large distribution" needs to be taken carefully – depending on the diversity of usage models in the organization, it may be wise to let each user customize this value.

Variations: Rather than only providing options to Send or Abort, the dialog could include the list of names, with checkboxes next to each, thus allowing the user to remove some of the unnecessary recipients then and there.

Existing cases: This functionality was part of the "Intel Email Effectiveness Coach" (IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years. It is also included in eMailAdvantage Assistant, a similar tool developed and used by BP in 2006.

The Intel Email Effectiveness Coach (IEEC), which is referenced in a number of solutions in the present document, was an MS Outlook add-in invented by the author and developed internally at Intel in 2001, where it was used for a number of years.

This tool gave "Just in Time" coaching on proper email usage by running in the background and popping up a warning when it observed any of about a dozen productivity errors in a message being sent. These errors included an empty subject line, missing attachments, sending to a too large distribution, too many back-and-forth messages in a thread ("time to pick up the phone?!"), and others. Users could select the errors they wanted to be alerted to, thus preventing annoyance at irrelevant alerts for a given individual work style.

The tool was well received and had inspired BP to incorporate the functionality in eMailAdvantage Assistant, its own internal email coaching tool.

♦ **Limit in software the number of recipients per message**

What: Deploy a software tool that will limit the number of addressees that can be specified in a message being composed.

Benefits: This somewhat extreme measure can check the habit of copying numerous "FYI" recipients, thereby reducing the overload. It can also send a strong message that raises awareness to the problem, and force senders to scrutinize their recipient list and match it to the business process involved.

Caveats: The number of permitted recipients is a critical parameter: too many and the effect disappears, too few and legitimate communication may suffer. Assuming a relatively small number is chosen, there is sure to be some pushback from employees, which needs to be addressed carefully when communicating the change.

See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept and block the typing of addresses beyond the permitted count, while popping a suitable message to the user.

Variations: Since different users have different messaging needs, it may be useful to allow customization of the permitted recipient count in accordance with job function, or a system of approving exceptions in some cases.

Existing cases: This solution was developed and deployed (for internal messages) at sports car maker Ferrari in 2013, using three as the maximum recipient count. This was accompanied by a strong management message to employees: "talk to each other more and write less".

Related links: Ferrari's announcement: http://bit.ly/IOCR039.

Technology assisted behavior change

Note that Ferrari isn't merely *telling* employees to write less and talk more; it is combining a firmly communicated policy about the permitted recipient count with a software tool that enforces the desired behavior. In effect, the company is helping its people avoid succumbing to temptation.

The author has always been a fan of such "technology assisted behavior change" solutions, although they do need to be handled with care. As long as the new policy is viable, the addition of a software tool to nudge errant users into line can increase the likelihood of a successful change. The opposite can happen if the policy is not well thought out, or if management fails to back it firmly enough to overcome opposition.

◆ Modify the Reply to All function to require verification

What: Add functionality to the RTA function that will ask the sender to confirm, on a person by person basis, who they really need on the list. Clicking RTA will pop up a dialog box with the list of replied-to addressees, with check boxes next to the names that allow the user to confirm or remove recipients.

Benefits: This simple step would make senders think about who they are sending to, resulting in less unneeded mail.

Caveats: See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept the RTA click and present the required dialog. It is recommended that the dialog include "Check all" and "Uncheck all" buttons, to facilitate the process of actually keeping all recipients if desired (this would reduce user annoyance at the added step).

Variations: A key decision to make is whether to have all names checked or unchecked by default when the dialog appears.

It would be advisable to have a predefined threshold recipient count (on the order of 5 – 10 recipients) below which this verification would not be invoked.

♦ **Modify the Reply to All function to exclude by default CC recipients**

What: Change the *Reply to All* feature so that only people on the To: line are included in the reply message's address list, whereas people on the CC: line (who are there as FYI recipients anyway) are not. The sender would need to add the CC: recipients manually each time the message is resent.

Benefits: This solution would significantly reduce low value emails received by people who were copied on a message long ago and remained on for the life of the thread.

Caveats: Senders might not realize they were not copying everybody, which could lead to problems. To prevent this, a warning could be programmed to pop up and alert the sender until they get used to this state of affairs (and check "Do not show this alert in the future").

See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept the RTA click and take the required action.

Variations: The pop-up could include a checkbox to "Include all CC recipients", making it a bit easier to intentionally override this feature; this would reduce user annoyance and help acceptance.

Existing cases: Although it should be technically feasible, to the author's knowledge this solution has never been deployed.

♦ **Product: NoReplyAll – make messages incapable of RTA or Forward**

What: The NoReplyAll Outlook Add-In, from Microsoft Research, adds two buttons to the Outlook ribbon that allow the <u>sender</u> to prevent <u>recipients</u> from Forwarding or Replying to All when they receive the message being composed. The tool works with MS Outlook 2007, 2010 and 2013.

Note: this add-in also alerts on empty subject lines and missing attachments.

Benefits: In addition to the obvious use for preventing the inadvertent forwarding of sensitive information, the RTA-

preventing function has some potential in stopping thoughtless RTA operations.

Caveats: The fact that this function must be invoked by the sender for each message means that many messages will go without it, since people are likely to forget (or not bother) to apply it selectively.

Note that this is not a formally supported product; read the warnings on the download page.

Implementation: This tool is a free download from Microsoft Research. Only the sender needs to have the add-in installed, but sender and recipient must both use Outlook 2007 or later, and route their mail through Exchange servers.

Related links: Description: http://bit.ly/IOCR003. Download page: http://bit.ly/IOCR002.

♦ **Consolidate organizational blast emails**

What: Replace the multiple, uncoordinated organizational announcements and updates blasted to all employees each week with one (or a few) consolidated mails, e.g. "What's new this week", or "HR Weekly Newsletter".

Benefits: Obvious, as long as the policies formed are sensible.

Caveats: taking the power to blast messages at will away from previous owners may not go unopposed, an opposition which must be addressed. There is also a risk of losing a measure of agility by making communication to employees too controlled.

Implementation: This requires serious analysis of the many messages being sent around in the company or business unit, which can then be mapped and either eliminated or consolidated. To keep the system going, one should appoint "gatekeeper(s)" invested with the authority to permit or refuse the inclusion of information in the weekly message – and include a waiver process, whereby a senior manager may permit ad-hoc blast messages in special cases.

Variations: Once a weekly update exists, it makes sense to also post it on the Intranet, where some people may prefer to access it. Note that experience shows that a once-a-week update delivered by email is both acceptable and preferable to many people, so using the Intranet alone is not a good idea. Ideally employees should be allowed to elect whether to have such updates sent to them by email, by RSS feed, or not at all.

Existing cases: The author has seen this applied in a structured fashion in a number of large corporations.

♦ **Regulate access to global distribution lists**

What: Control firmly, by management policy, who is permitted to send messages to the global "All Employees" distribution in a company or business unit. For example, limit this action to specific administrative assistants, or to specific persons in the internal communication group.

Benefits: applying such a policy would counteract the ease with which people tend to abuse the "All Employees" list, and eliminate the damage such abuse causes. Justified blast messages could still go out at any time, but the originator would need to convince the "gatekeeper" of the need.

Caveats: Unless the choice of "gatekeepers" is sensible, this may create a bottleneck in employee communications. It is particularly important to make the authorization by role ("The admin of VP HR") and not by person ("Pat Smith"), to secure the system against people moving and taking the authority with them.

Implementation: this is a matter of policy setting; and unlike some other solutions, this one makes such good intuitive sense that it can expect little opposition.

Variations: Rather than rely on management policy, it may be possible to limit access to global distribution lists by software control.

Existing cases: this policy has been observed to evolve independently in many organizations.

♦ **Improve maintenance of global lists**

What: Implement a dependable system to maintain global distribution lists (e.g., "All Engineers") correctly over time. The main objective is to ensure that as employees come, go or change roles the lists reflect this immediately, rather than becoming stale.

Benefits: having dependable lists enables issuing mails to the right people with a minimum of effort, while avoiding sending irrelevant messages to the wrong people.

Caveats: this seemingly obvious idea is actually quite hard to implement dependably because it depends on human judgment and persistence.

Implementation: two elements are needed for global lists to work well:

a. The correct lists hierarchy needs to be in place (i.e. the list of lists needs to make sense).

b. The names in each list need to be the right ones.

Both these factors need to remain correct over time despite reorganizations, mergers, and employee moves. There is no perfect automatic system for this – a human must be appointed to own maintenance of the lists (this should be a role, not a named individual); and maintenance should follow written workflows linked to HR processes.

Variations: one could implement a system (computerized or manual) that allows individuals to request to be added to or removed from a list, thus in effect recruiting all employees to do quality assurance of list content.

Existing cases: the author has yet to see a company that has list management fully under control. More often than not lists are maintained sporadically by some admin or another.

♦ **Drive review and reduction of individual employees' distribution lists**

What: Launch an initiative where each employee reviews the distribution list of their periodic mailings (status reports, team meeting minutes, etc.) and reassesses who needs to remain on the list.

Benefits: if done in earnest, this can eliminate much unnecessary traffic, because such lists accumulate people over time and often fail to remove them when appropriate.

Caveats: this goes in the face of people's underlying psychological drive to "be noticed". It could easily fail unless done with suitable top-down education and motivation.

Implementation: this is best done as part of a wider organizational effort to mitigate IO, banking on the education done in that effort. Requiring people to report back on completion of the review and on size reduction achieved, possibly with some contest elements, would help.

Variations: a good suggestion is that senders survey their recipients to confirm whether they want to remain on the list. If applicable, the survey may include the choice of getting off the list,

remaining on it, or accessing the content online rather than by email.

Existing cases: the author had done this when at Intel for his extensive monthly status report list, and the survey result was that a third of recipients elected to remain copied by email, a third preferred to access the report via an Intranet site (without email), and a third wanted to get off the distribution entirely.

2.3. Replacement of email with alternate channels

♦ **Implement a "No Email Day"**

What: the misnomer notwithstanding, this solution (also known as "Zero Email Friday") involves setting a fixed weekday where <u>internal</u> interaction within the group focuses on voice communication (face to face or by telephony) rather than on email. Emailing people outside the group is permitted; internal mail is highly discouraged.

The initial motivation is usually to eliminate the absurdity of people emailing coworkers in the next cubicle rather than standing up and conversing.

Benefits: when done with proper leadership and change management, this method has been shown to have benefits beyond the immediate email traffic reduction. By encouraging coworkers to talk to each other, it can improve the overall social atmosphere in a workplace.

Caveats: this solution is not a good fit in every situation. For instance, an experiment run in an engineering group at Intel had failed because the group chosen were in meeting rooms and out of their offices most of the time, so it made no sense to tell them to go talk to each other in those offices.

Concerns are sometimes raised that this solution will merely push mailing to the next day. It should be noted, however, that those interactions that are resolved by voice will not require such mailing.

Implementation: this is primarily a matter of setting a behavior norm across a group; top down deployment led by the group's senior manager is necessary, and requires great care to ensure managers role model the behavior and employees accept it positively. Deployment is best done in fairly small groups (up to a few hundred) that have a shared mission and preferably work in the same place.

Learn more:
http://bit.ly/IOCR004

Variations: the degree of fanaticism with which email use is banned can be varied. In the extreme case (Veritas, see below) "violators" can be fined, but this is not commonly seen.

Note: access to external email is still needed, so methods such as blocking the mail service during the given day are not involved.

Existing cases: The most successful case reported has been running since 2006 at PBD, a fulfillment company in Atlanta, GA. It was initiated and led by the CEO, with outstanding results including a reduction of email traffic for the entire week, stronger workplace relationships, higher customer satisfaction and happier employees. As of 2013 PBD remains fully committed to this practice.

An earlier implementation was run in 2004 at the 240-person marketing department of Veritas Software, led by the VP of marketing. In that implementation violators were fined a dollar per message, and repeat offenders mockingly put on "Wanted" posters. However, this was done carefully: the fines went to a charity chosen by the employees, and a spirit of humor and good sport had been successfully maintained.

Other organizations who tried this solution are U.S. Cellular (which later added a "No meetings Friday"), Deloitte, and CSIRO.

Related links: A book excerpt describing the PBD case in some detail: http://bit.ly/IOCR005.

Success story: No Email Day at PBD.

The best known success of No Email Day is from Atlanta-based fulfillment services company PBD. Scott Dockter, the company's CEO, saw the need in 2006 when he noticed he was emailing his admin in the next room; he went on to implement a No Email Friday across the company – and he did it right, managing the change very effectively. He discussed it with his staff, he communicated the plan to the employees, and he stuck to it in the face of early objections.

The outcome was spectacular. After a while, the program caused a reduction in email volume – not just on the Friday but all week long. Collaboration among coworkers improved as they found the delight of real human contact. Customers, too, were happy and began a move to more direct conversations. People had more time to think and better work/life balance; the company has seen a big rise in productivity, customer service, and bottom line results. Seven years later, PBD is proud and happy to continue this practice.

♦ **Use presence-aware channels to reduce email traffic**

What: Apply Instant Messaging tools with Presence Awareness (i.e., an indication of the recipient's real time availability) to facilitate synchronous communication, thereby reducing the use of email.

Benefits: Knowing that the recipient is available at a given moment empowers synchronous exchanges that can significantly accelerate interaction and problem resolution. Email can then be used for cases where asynchronous contact is inevitable, e.g. across many time zones or when the recipient is seen to be away from their computer.

Implementation: The ability to see whether one's colleague is Available ("online"), Away, or Busy ("Do not disturb") is built into a number of tools, including all variants of Instant Messaging, Skype, and Facebook. For the enterprise, tools like MS Lync are a natural choice and readily available for deployment.

However, it is not enough to have the communication tool in place; it takes a concerted training effort to educate users to abandon email in favor of instant messaging tools, and to use these correctly. It is particularly important to have people maintain a "network of trust" by updating their presence status honestly, so their colleagues can rely on this status; and to ensure people respect others' "Do not Disturb" status.

Existing cases: Training in "Instant Messaging Best Use" was used in 2003 to drive a set of best practices across Intel Corporation. An evaluation of the outcome demonstrated improvement of effective teamwork across geographical barriers. Another, mid-sized hi-tech company had deployed MS Lync as part of an IO reduction program and saw a significant reduction in email loads, because when an employee got a mail from a remote person, they could see instantly if the sender was available, and if so just picked up the phone instead of replying by email.

♦ **Replace email with online posting**

What: eliminate certain classes of emails by posting the content instead to MS SharePoint or another online repository.

Benefits: In addition to reducing email traffic, this strategy creates a library of the content that remains accessible, allowing people to consult the content at any future time.

Caveats: This solution should not be applied to mission-critical messaging, since it is quite possible that someone will miss seeing an important message in a timely fashion.

Implementation: This is an inexpensive alternative to enterprise content syndication (q.v.), being both less powerful and less complex (and expensive). In any sizable enterprise the required infrastructure (e.g. MS SharePoint) is available at no incremental cost. Small organizations that lack this infrastructure can easily use the many available low-cost or free content sharing solutions such as Google Drive or Yahoo! Groups.

Variations: it is useful to facilitate posting content to the online repository, by applying features such as "Mail documents to SharePoint" (available in Windows SharePoint Services 2.0 and later).

Existing cases: a start-up company in Israel had implemented this solution to stop the misuse of email for disseminating jokes and similar non-work emails, by setting up an Intranet location for them and assigning an admin to receive the jokes from employees and moderate their placement onto the Intranet.

PBD, the fulfillment services company of "No Email Day" fame, reportedly discovered that the many routine status report emails, filled with statistics and weekly performance data, were better off posted to the company's intranet.

♦ **Deploy an Enterprise Content Syndication solution**

What: an enterprise-wide syndication system allows posting content to a central server and enables employees to consume newly posted content via RSS or email subscriptions.

Benefits: at its simplest, this allows the organization to move entire classes of email – e.g. status reports and HR announcements – from "push" mode via email, to "pull" via RSS feeds, freeing the employee's Inbox for action-oriented messages.

More advanced implementations can allow advanced search-based subscriptions that provide the employee with a personalized stream of content meeting specific search criteria.

Caveats: the switch from "push" to "pull" is a significant behavior change that requires education and training. Failure to invest in driving this change can result in a failed adoption.

Implementation: basic RSS capability is included in MS SharePoint Server 2007 and later; more powerful capabilities may require

other products. These are typically non-trivial solutions requiring significant investment of time and money both up front and in ongoing maintenance; deployment should be managed as a serious IT project, with involvement of the IT and Training groups.

Variations: in addition to RSS feeds, solutions will provide the alternative option to sign up for an email subscription to new items meeting one's criteria. This choice adds flexibility and can make the adoption easier.

♦ **Product: Attensa StreamServer – an enterprise aggregator**

What: Attensa StreamServer is a sophisticated, comprehensive syndication solution. It collects information from business systems, web sources and communities inside and outside the enterprise, categorizes and filters the information, and then delivers it to the employees who need it, allowing the creation of customized streams.

Benefits: Although this system goes far beyond mere information overload reduction, it does enable the latter by filtering and aggregating information that would otherwise be hitting employees in a defocused flood.

Implementation: This is a commercial product, which interfaces with existing enterprise systems (notably MS SharePoint). It is sold in both SAAS and on-premise versions. Details should be discussed with Attensa.

Related links: Vendor site: http://www.attensa.com/.

♦ **Product: Taglocity – an online email storage and retrieval utility**

What: Taglocity by Terazen Technology is an enterprise (or group) email management system that provides centralized storage, sophisticated message tagging capabilities that enhance search and retrieval, notification of specified content changes by RSS or email, and improved conversation management features. Its enables effective group interaction with email – <u>outside</u> of the usual, overloaded email paradigm.

Benefits: this solution is an enhanced implementation of the combination of the "post online instead of mailing" and the "consume content in pull rather than push mode" concepts. It reduces the amount of redundant email sent around, and allows rapid access to stored message threads with powerful searching

and filtering capabilities centering on human and semi-automated tagging of messages and conversations.

Implementation: the solution consists of an add-in for Outlook 2003/2007/2010, and a server-side "TeamFeed" store that can be hosted at Taglocity or inside the customer's firewall.

Taglocity offers professional services for enterprise installation, integration, customization, and training.

Related links: Vendor site: http://www.taglocity.com/.

♦ **Product: IBM Connections – Enterprise Social Networking**

What: IBM Connections (previously Lotus Connections) complements and partially replaces email with a company-wide social networking platform including forums, blogs, wikis, communities, and other capabilities.

Benefits: in a sense this is the ultimate solution in its class, in that it overhauls the entire internal communication and collaboration paradigm of the organization and leverages the full power of modern social networking capabilities to provide a single integrated system. If successful, this can revolutionize the way employees interact and collaborate, resulting in a real productivity increase; Information overload reduction will be just one of many benefits.

Caveats: this solution enables a serious change in work processes, and as such is not to be taken lightly. Unless the behavioral and cultural aspects are handled correctly (and not every organization is ready for this) the outcome may be disappointing.

The desired reduction in email overload results from replacing some messages with more direct channels within the social network; obviously this could increase overload in the other channels. The trick is to optimize the channel through which each type of communication flows, so the total load is lower than it was before the deployment.

Implementation: while one could develop or integrate similar systems internally, and some do, it is a major undertaking; one would do well to consider commercially available solutions, among which IBM Connections stands out. Seeking IBM's assistance in deploying this complex product would be advisable.

Existing cases: IBM Connections is in worldwide use inside IBM, providing a social platform for the company's entire workforce. For additional case studies see link below.

Related links:

Product page: http://ibm.co/194WhHI.

Customer case studies on IBM site: http://ibm.co/15KP36p.

♦ **Eliminate internal email altogether (as an organization)**

What: stop using email for intra-organizational communication, replacing it with suitable alternative tools. External email for communicating with customers and others remains in place.

Benefits: if successful (and this is a big "if"), this drastic step can eliminate email overload while routing the interaction to more effective collaboration channels.

Caveats: email is so ingrained in knowledge workers' work paradigm and psyche that the intent to drop it is sure to meet with strong opposition. Pulling this off requires true mastery of change management, and relies on the successful construction of a fine-tuned set of alternatives.

Implementation: this solution can only be tried at a company-wide scope, and then it requires the total commitment of the CEO. Even then, it should be expected to take a few years of hard work from intent to completion, during which time new tools must be evaluated, optimized and deployed, and employee support must be earned.

On occasion one hears of a manager who – in a moment of exasperation – simply bans the use of email; these attempts, being the very opposite of the gradual process advocated above, inevitably fail.

Learn more:
http://bit.ly/IOCR006

Existing cases: The CEO of Atos, a multinational IT services and consulting corporation based in France, announced in February 2011 that the company will be [internally] "Email Free" within 3 years. During this period the company will be deploying new collaboration and social networking platforms that will eventually replace email for internal communications. As of mid-2013 the program is known to be progressing as planned, driven by sound program management practices.

♦ **Stop using email altogether (as an individual)**

What: Stop, and make it known that you've stopped, using email. Use social channels like Twitter and Facebook instead. (Note that this solution refers to an individual who works in an organization or business environment that continues to use email.)

Benefits: Though not for the faint of heart, this solution has advantages beyond the immediate benefit to the individual involved; it will inevitably gain visibility (and some notoriety), and encourage examination of the role of email and of IO in general in the organization and beyond. In fact, it is a prime example of a change agent's work.

Caveats: This is not something that anyone can manage; being part of a hierarchy means you have to get your superiors' approval (or at least acceptance), and unless you do this properly you could get in trouble. Not surprisingly, people observed managing this solution are senior enough to feel safe trying it.

Implementation: Details vary, but generally one must have a high measure of "online literacy" and proficiency with social media that can replace email in their work relationships. The replacement of mail by other media must be navigated with great care and sensitivity to the impact on one's coworkers and collaborators. For example, Luis Suarez (see below) still reads his email, which is down to a couple of messages a day, but responds to it by moving the conversation to social media.

Existing cases: The most well known application of this idea is by Luis Suarez, a Knowledge Manager and Social Computing Evangelist in the IBM Software Group division. Suarez has renounced email in 2008 and is still going strong. Several dozen others at IBM are said to have followed his example to various degrees. Another case is Prof. Paul Jones of the University of North Carolina at Chapel Hill, who gave up email in 2011. Both of them blog and lecture about this, driving the idea into public awareness.

Related links:

Luis Suarez blogs about his No Email experience at http://bit.ly/IOCR041.

Prof. Paul Jones blogs about his No Email experience at http://bit.ly/IOCR040.

> Even if you aren't planning to try this radical work style, I recommend reading the linked blog post categories by Suarez and Jones – there is much to learn from their thinking and experience!

♦ **Redefine scope of email usage at the group level**

What: at present email is used for any purpose the sender wishes, which include numerous uses best left to other media. Holding a structured group process to analyze the current usage patterns and to redefine what email should and shouldn't be used for in the group going forward can lead to real improvement. For example, the group may decide to relegate certain reports to an RSS channel, or it might agree that email is to be used only for one to

one messaging, or for action-oriented messages, with everything else going on other media.

Benefits: given the haphazard growth of email use since the 90's, there are considerable opportunities for improvement by the simple definition of group agreements. In addition, the very process of arriving at these agreements can raise awareness and drive a mindset change in the participants.

Implementation: the affected users must be engaged in the definition process so as to secure their understanding of, and commitment to, the changes defined. Brainstorming techniques should be used, together with data collection to characterize current usage patterns. This requires proper facilitation and process management.

Existing cases: a 200 person division at Abbott Vascular, a unit of health-care company Abbott Laboratories, has directed workers to let the importance and complexity of their message dictate whether to use cellphones, office phones or email. Reported outcomes are less email and greater clarity on the urgency of different communications. See link below.

Related links: Article in the Wall Street Journal: http://on.wsj.com/14iftQn.

♦ **Intercept long email threads and encourage a switch to voice**

What: a notorious problem is endless email exchanges that degenerate and diverge to the point where no one remembers how they started. Many educational efforts teach that at some point it is better to just pick up the phone and conclude the matter at hand by voice conversation. This solution provides a reminder to do this by intercepting at the source messages with more than N previous replies in a thread, and recommending picking up the phone instead.

Benefits: the fact that over-long threads are a common problem proves the potential benefit of a gentle reminder in putting a stop to them. In addition, this can encourage the habit of talking to coworkers without going to the extreme of a "No email day" (q.v.).

Caveats: some users may require longer threads than others in the course of their work. This can be addressed by making the threshold N user-adjustable.

See "Notes on developing software solutions" in the appendix.

Implementation: technically this requires an add-in to the mail client that would intercept the Send click, count the number of back-and-forth replies in the message tail and present a dialog box suggesting aborting the send operation in favor of telephoning the intended recipient.

Existing cases: This functionality was part of the "Intel Email Effectiveness Coach" (IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years. It is also included in eMailAdvantage Assistant, a similar tool developed and used by BP in 2006.

2.4. Other methods to reduce email quantity

♦ **Intercept at the source messages with missing attachments**

What: a tool that identifies when a message is about to be sent that lacks the attachments it was supposed to have, and alerts the sender to this mistake.

Benefits: omitted attachments are a common occurrence. In addition to causing delay and embarrassment, this necessitates two extra emails – one to alert the sender to the omission, and one to have the attachments sent over. This solution can eliminate this useless traffic.

Caveats: If you plan to develop this in-house, see "Notes on developing software solutions" in the appendix.

Implementation: technically this requires an add-in to the mail client that would intercept the Send click and present the required alert dialog if the attachments are missing. Missing attachments are detected by checking for certain verbiage – "attached", "I attach", etc – in the message (ignoring earlier quoted messages).

Existing cases: this functionality is included in MS Outlook 2013. It is available to users of earlier versions of Outlook as features in the NoReplyAll Outlook Add-In (q.v.) and in the commercial products Standss SendGuard (q.v.) and Sperry Add-ins (q.v.). It was also part of the "Intel Email Effectiveness Coach" (IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years, and of eMailAdvantage Assistant, a similar tool developed and used by BP in 2006.

♦ **Redefine work processes to reduce messaging volume**

What: Modify, by management action, the underlying processes that give rise to many email types.

Examples: go from weekly to biweekly status reports; reduce the number of required approvers in certain processes; define a policy governing internal employee communications that is optimized to reduce overload.

Benefits: any normal organization has a baggage of superfluous messaging routines that can safely be eliminated with immediate benefit to email load – this addresses the load at one of its most prolific sources. In addition, some of the changes will undoubtedly streamline cumbersome processes with benefits far beyond the impact on email.

Caveats: In addition to the obvious risk of eliminating messages that are needed, there is a danger that senders of the eliminated messages may not cooperate. E.g. telling someone to cut on their status report dissemination contradicts a basic need to be noticed. Care should be taken to address any such concerns when planning the implementation.

Implementation: Although there are always low hanging fruit that can be implemented with ease, identifying further process changes should be done carefully. A proper analysis process is highly recommended, and it is critical to identify and engage all of the affected stakeholders in the changes, both inside and around the group.

Existing cases: France-based multinational corporation ATOS is doing this – with a vengeance – as part of its plan to eliminate internal email by 2014. The company is systematically going through all its processes and replacing email with other tools. Once a process is proven to run without email it is formally awarded "Zero email Certified" status.

♦ **Enable opting out of undesired threads**

What: implement the capability to stop receiving in the inbox messages belonging to a long thread (conversation) that one has no more interest in.

Benefits: stops cluttering the inbox and wasting time on once-relevant threads that have morphed to be irrelevant. The unsubscribed ("muted") thread is still available in another folder, and accessible there in case of need.

Implementation: This capability is available in Gmail (as "Mute conversation"; the conversation is archived and future messages in it skip the inbox). MS Outlook 2010 and later have a similar feature ("Ignore conversation"). It is also available to users of earlier

Outlook versions as a feature in the add-in ClearContext Pro (q.v.), and in Taglocity (q.v.).

♦ **Minimize at the source notifications from social and other web sites**

What: Go into your account settings on every web site that sends you email notifications, such as Facebook, Twitter and LinkedIn. Find the notification settings page and adjust these settings to minimize the amount of mail they send you.

Details vary from site to site, but two tactics to look for are to uncheck most of the "Send me email when..." options, and to opt to receive the remaining mails as weekly summaries or digests, rather than one at a time.

Benefits: As online involvement grows, so does the number of these notifications, until they can clog the inbox. Most of these mails are unimportant yet distracting; receiving the information in a digest format, or in pull mode outside of email altogether, can be very beneficial.

> While you're at it, unsubscribe from any newsletter you haven't bothered to read in a while. Take care to only do so if you've subscribed to it in the past (uninvited spam is best deleted without unsubscribing).

♦ **Product: Notification Control – facilitates access to web notification settings**

What: Notification Control by Ben Lang and Tim Kendall is a web page with links to the notification settings pages of over a dozen popular web sites, such as Facebook, LinkedIn, and eBay. It thus facilitates and encourages the optimization of your settings on these services.

Implementation: This is simply a web page with links on it. It's as simple as it gets – and as effective as it is simple!

Vendor link: http://notificationcontrol.com.

♦ **Product: Unroll.Me – aggregates newsletters and subscription emails**

What: Unroll.Me detects newsletters and similar subscribed-to emails and notifications, removes them from the inbox to a separate folder, and replaces them with a single daily digest. It also facilitates unsubscribing from such emails.

Benefits: The abundance of notifications and newsletters arriving daily into one's inbox has become a serious problem. This tool cleans them out of the inbox, allowing better focus on actionable emails. Its single daily rollup email allows scanning the various newsletters in a much more efficient manner.

Implementation: Unroll.Me supports Gmail, Google Apps, and Yahoo! mail.

Vendor link: https://unroll.me.

♦ **Product: Unsubscriber – facilitates unsubscribing from mass mailings**

What: Unsubscriber by OtherInbox lets you unsubscribe from newsletters and the like with one action. You move the unwanted emails to an *Unsubscribe* folder, and any new email from that sender is routed to that folder while Unsubscriber notifies the sender that you want to be removed from their list.

Benefits: This solution makes unsubscribing as simple as it can get, helping you declutter your inbox from subscription emails you no longer need.

Implementation: This tool works with Gmail, AOL mail, and Yahoo! mail. An iPhone version is also available which works with Gmail and Yahoo! mail.

Note: Unsubscriber's functionality is included in OtherInbox Organizer (q.v.).

Vendor link: http://www.otherinbox.com/unsubscriber.

♦ **Product: ZigMail – handles shopping, financial and transactional emails**

What: ZigMail provides you with an email address you will use for shopping and for receiving financial and transactional messages. It then sorts and stores such emails for you and sends you a daily digest to your primary email address. When you sign up, ZigMail also scans your primary inbox and identifies messages it can move (with your approval) to the new address.

Benefits: In addition to decluttering your inbox, this tool eliminates the problem of undesired promotional mail getting to your primary address from online sites you visit.

Implementation: ZigMail is compatible with any existing email account.

Vendor link: http://www.zigmail.com.

3. Solutions that improve the *Quality* of email

This category includes solutions that aim to improve the quality characteristics of email messages being generated, thereby making them easier and faster to process by the recipient. Included solutions may address the clarity, brevity, and structure of emails so as to improve their legibility.

3.1. Reduction of message length

♦ **Implement telegraphic message standards: sentenc.es**

What: Resolve to keep all emails to five sentences – and publicize the fact to raise awareness. This extreme solution has been elegantly implemented for personal use as http://five.sentenc.es, where it is explained – in four sentences – thus:

> "five.sentenc.es is a personal policy that all email responses regardless of recipient or subject will be five sentences or less. It's that simple... Treat all email responses like SMS text messages, [which use] a set number of letters per response. Since it's too hard to count letters, we count sentences instead".

Benefits: This daring solution forces senders to seriously think when writing – and to invest some time to benefit their recipients. It also has a major, viral awareness component, due to the visible sig at the end of each message:
> *Q: Why is this email five sentences or less? A: http://five.sentenc.es.*

Caveats: In a business setting many messages require more than five sentences. It may still be possible to use the five-sentence form for a subset of messages, but one would need to carefully define what the subset is in the context of a given group's communication needs.

Implementation: Given the above problem, there can be no sweeping policy on this; thus it becomes a matter of encouraging and role modeling this behavior. The web page at *http://five.sentenc.es* is available and can be referenced freely.

Variations: The number of sentences can be varied; the same originator has pages online for two.sentenc.es, three.sentenc.es, and four.sentenc.es.

Related links: sentenc.es has been invented and provided by Mike Davidson, who explains his rationale at http://bit.ly/IOCR008.

An apocryphal story tells of a CEO in a large corporation who would refuse to read any memo longer than one page: "if you can't explain it in one page then it isn't worth considering".

♦ **Limit message length by policy**

What: Set a policy that requires all messages of specified types to conform to specified length limits. A good example would be a policy that all status reports in a group must not exceed half a page in length.

Benefits: Shorter is better both because it reduces the time to read and because it forces the sender into disciplined consideration of what to include in the limited available space.

Caveats: The definition of limits should be coupled to the classification of the messages to which they apply; otherwise one risks trying to constrain to a general limit specific messages that by their nature require more space.

Implementation: This kind of policy, or group agreement, can be set either top down by a senior manager, or bottom up by having the group discuss and define the policy itself.

In either case, it is important to enforce the new policy. This is simple for status reports, since they are submitted to a superior who can refuse to accept them if they don't conform. In a bottom-up implementation, role modeling and coaching by all group members becomes important.

Variations: A policy like this can also be extended to include the structure of a message or report, e.g. specifying a bullet structure and the number of bullets allowed. Standardizing on a sensible and easy-to-read structure can eliminate much rambling, time-wasting prose.

Existing cases: The "half page status reports" policy had successfully replaced 1-2 page reports in a large business unit in a Fortune 500 corporation, with the edict coming from the unit's general manager.

♦ **Product: Shortmail – limits email messages to 500 characters**

What: Shortmail by 410 labs is an email service that limits all sent and received messages to 500 characters or less; attachments are not allowed. If anybody tries to send a message exceeding 500 characters to a shortmail address, the email will be held and the sender will be asked to write a shorter message.

Benefits: The idea is that by forcing all messages to be brief, people will focus their communications and the messages will be easier to read and deal with. This is a concept used effectively by Twitter.

Caveats: The service requires one to adopt a new email address (username@shortmail.me or username@shortmail.com), which may not be acceptable. The extreme limitation on length and attachments can also be a problem in many situations, and might drive people to send their content in a sequence of messages.

Implementation: This is a separate email service, which can be integrated with desktop email clients like MS Outlook and Apple Mail using IMAP and SMTP, or with Gmail using POP3. There is also an iOS app for the iPhone.

Vendor link: https://shortmail.com/.

3.2. Improvement of message clarity

♦ **Implement standardized "Action Message" templates**

What: encourage senders to format messages for rapid processing and action by the recipient, by using templates designed around these goals.

One such recommended template – the "Action Message" format – is comprised of very short paragraphs under the headers *What*, *When*, *Why*, and *Details*.

Benefits: This kind of format is practically guaranteed to result in better communication. It requires shorter time investment by the recipient, maintains a disciplined approach by the sender, and leads to earlier and more successful action.

Implementation: At its simplest, this can be driven by educating users to write their messages in this form, leading to immediate benefit. A more structured approach would be to develop preset message templates that already have the required headings for different classes of messages, and can be invoked and filled in. Such templates can be created centrally and made accessible to all users, e.g. via the Forms Library functionality in MS Outlook, with minimal effort.

Variations: The headers noted above are useful for a message requesting action; it is easy to define similar formats for other major message types, e.g. reorganization announcements.

If a centrally created template is deployed, one could consider adding a "New action message" button to Outlook clients in the organization that would launch this template in a form, similar to the way the usual "New message" button launches the default message form. This would require a minor degree of programming.

Example of an "Action Message"

> **Subject: ACTION: Need shipping approval NOW**
>
> **What:** I need you to approve shipping of batch 4533.
>
> **When:** By 1 PM today.
>
> **Why:** QA test shows this batch to pass shipping criteria, and we ship at 3PM.
>
> **Details:** The full QA data, if you want it, is in the Hold folder on the QA SharePoint.

Existing cases: The What/When/Why format has been used (manually) by people known to the author; it is found to be very effective in causing recipients to respond faster than normal (possibly also because these messages stand out!).

♦ **Provide writing and language training classes**

What: One of the most neglected causes of email overload is the fact that most people have quite limited writing skills, and write emails with no attention to the quality of the prose. The result is unclear communications, misunderstandings, and additional messages to try and elicit clarification. The problem is exacerbated in a global company, where messages in English must be written by non-native speakers. Training in writing skills and in the English language can be of real help.

Benefits: Teaching employees to communicate in writing will not only reduce costly email misunderstandings (which are often cited as a problem in the author's experience) and eliminate the flurry of clarification emails following them, but will also improve the quality of other written materials (reports and the like) across the business.

Caveats: It is not uncommon to see initial denial in organizations, especially hi-tech ones, when they are told their people can't write (or can't write English, if it is a foreign language to them). It is important to bust myths such as "we are all English speakers" – keeping in mind that even many native speakers of a language can't write a coherent document in it.

Another risk is that because classroom training is expensive, funding for it will not be available, or will be cut when resources become scarce in a downturn. The significant benefit must be firmly kept in mind when entering such a discussion.

Implementation: Language and business writing courses are best given in a classroom setting, and are available worldwide from a large variety of providers. It is recommended to choose one with specific experience in teaching email skills to audiences similar to the one in question (e.g. Engineers, or Public service administrators).

Variations: Although any writing course can be of benefit, specialized courses optimized to the specific requirements of business communication by email can be doubly beneficial.

One thing to keep in mind: If you manage a global organization, you need to have a clearly communicated policy as to which communications must be written in English, and which (if any) it is acceptable or required to write in the local language. This reduces confusion and forces people to acquire the necessary skill set (e.g., touch typing in both languages!).

♦ **Require Management Summaries by policy or technology**

What: Set a policy that requires all messages longer than, say, one screenful, or that have more than N characters, to have a short "Management Summary" at the top.

Benefits: Obviously, having a management summary can improve the legibility and processing speed of long messages. Preparing the summary costs time for the sender, but makes life easier for the recipient – a justified tradeoff, since there are multiple recipients and a single sender.

Caveats: Unless senders are capable and willing to write a good summary, this summary may be of limited value. Providing business writing training may solve this problem.

Implementation: Setting the policy is easy; ensuring it is accepted and adhered to requires education and effective change management. Depending on the nature of the group and the job types in it, it may also be necessary to define exceptions and specify which messages need a summary, based on the nature of the message rather than on its length alone.

Variations: One could add an element of enforcement by applying a software agent to intercept long messages lacking a summary, and to alert the sender when such are detected.

Existing cases: The requirement for summaries was included in the YourTime program deployed at Intel (q.v.). The enforcement functionality was part of the "Intel Email Effectiveness Coach"

(IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years. It is also included in eMailAdvantage Assistant, a similar tool developed and used by BP in 2006.

♦ **Drive Meeting Request quality by education or technology**

What: Meeting invitations sent by users' calendar application are messages in their own right, and people should pay attention to their clarity and usefulness. Standards that require giving the meeting a descriptive subject (not "One on one"!), including a clear agenda, specifying an unambiguous location (not "My cube"!), all need to be defined, taught and encouraged.

Benefits: clear meeting invitations reduce email load by making it unnecessary to send inquiries for missing detail; additionally, they can make the meetings themselves more effective (a sorely needed effect) by helping people come prepared.

Implementation: Setting the standard is easy; ensuring it is accepted and adhered to requires education and effective change management. This subject can be included in whatever other email training is deployed, from frontal classes to short "tips" disseminated to employees.

Variations: One could add an element of enforcement by applying a software agent to intercept meeting requests lacking the required elements and style, and to alert the sender when such are detected.

Existing cases: Training on how to form meeting requests was part of the standard expectations taught in the YourTime program deployed at Intel (q.v.). Enforcement functionality was applied to some extent in the "Intel Email Effectiveness Coach" (IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years.

What we mean by meeting request quality

Consider the following meeting appearing in your calendar:

Subject: One on one. Location: My cube.

Can you tell, weeks after accepting it, what it's about? You have to open the item and figure it out. Now try this form:

Subject: Jan Jones / Ken Ng one on one. Location: Jan's cube.

See the difference?

Another point: be mindful of mobile device users – remember that long lines will be truncated on their small screens. Therefore, put the more vital information at the start of a line: *"Mark's staff – product status review"*, not *"Meeting to review product status to be held by Mark and his staff"*.

3.3. Feedback on message quality

♦ **Automatically "Return to sender" poorly written email**

What: Automatically detect at the server email that fails to meet minimal standards of usefulness or quality, and return it to the sender with a note that explains that it was not delivered, and why.

Benefits: This would not only reduce low-quality incoming mail for the recipient, but would also educate the sender of such mail, and allow them to revise the message before resending it. The advantage of actually returning rather than deleting the message is that any false positives (important mail flagged as bad) would not go unnoticed.

Caveats: The reliability of such a system would only be as good as the ability of the detection algorithm to discern low value messages reliably.

Implementation: This could best be done via software on the server, although in principle it could be implemented on the client as well.

Variations: The criteria for returning the message might be set to address low quality (e.g. verbosity, bad grammar, poor structure) and/or other attributes the organization wishes to enforce (e.g. excessive number of addressees).

Existing cases: Although it should be technically feasible, to the author's knowledge this solution has never been deployed.

♦ **Legitimize and facilitate peer coaching and constructive criticism**

What: instill a culture where recipients feel free – and duty bound – to hit "Reply" and provide constructive feedback to people who send them messages of poor (or, possibly, also of outstanding) quality. Such feedback (also called "coaching") could be freely written, but could also use predefined templates (see below).

Benefits: Pointing out to senders what exactly is wrong in the messages they send, with the feedback coming from their

coworkers, would strongly incentivize them to improve their habits. In a sense, it would turn inconsiderate sender etiquette from a seemingly victimless crime to a real cause of pain to a personal acquaintance.

Caveats: The main issue is that people would normally be embarrassed to complain to senders, depending also on their relative positions in the power structure. The use of predefined templates can mitigate this problem, but ongoing education and role modeling are critical.

Implementation: A simple implementation would simply educate people to send back constructive feedback, and ensure managers role model this behavior to give it legitimacy. The risk that people would be afraid to offend can be addressed by providing standard feedback templates for common situations: by using canned, fixed responses the act becomes less "personal", and the sender doesn't need to agonize over how to phrase the feedback correctly.

For example:

- A template for response to an unjustified *Reply to All* might state: "Thanks, but I really don't think that everyone on the list needed to receive this. Please be more careful in future with *Reply to All* and help us all be more effective".

- A template for a long message might say: "Thanks for the detailed message, but it would really help me if next time you could add a summary at the top".

Such templates can be created centrally and made accessible to all users, e.g. via the Forms Library functionality in MS Outlook, with minimal effort.

Variations: Merlin Mann, author of the *43 folders* blog, once invented an interesting web-based implementation of standardized feedback. Recipients of undesired messages were invited to direct the originators to the web page at http://www.thanksno.com/, which gave them a carefully written lesson. Unfortunately that page is no longer available, but it can be seen in the archived version at http://bit.ly/IOCR009. This idea can be easily customized within an organization by using a suitable Intranet page.

Existing cases: A requirement to provide feedback to senders has been deployed in a number of companies. It was part of the training in the YourTime program deployed at Intel (q.v.).

♦ **Intercept low-quality messages Just-in-Time at the source**

What: Deploy a software agent to intercept mails being sent that contain specific quality errors (e.g. missing subject line, important messages not flagged as such) and to alert the sender when such are detected. Clicking Send on such a message will pop up a dialog box pointing out the error and requesting confirmation whether to send anyway or abort.

Benefits: This solution complements other forms of email etiquette training with "Just in Time" coaching at the moment an error is actually made, thus preventing the error and reinforcing the desirable behavior.

Caveats: The repeated alerts could become annoying to some users. The "Intel Email Effectiveness Coach" addressed this by allowing the user to disable a specific alert type for future cases ("Don't make this suggestion in future messages").

See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept the Send click, check the message for errors, and present the appropriate dialog.

Existing cases: This functionality was implemented as the "Intel Email Effectiveness Coach" (IEEC), an Outlook Add-in developed by Intel IT in 2001 and successfully used across Intel for several years. It is also included in eMailAdvantage Assistant, a similar tool developed and used by BP in 2006. Both tools addressed some ten different etiquette errors (some of them discussed in this document in the context of specific solutions).

A commercial product using this approach is Standss SendGuard (q.v.).

♦ **Product: SendGuard for Outlook – intercepts sender etiquette errors**

What: SendGuard for Outlook by Standss is an Outlook add-in that captures potentially unprofessional or embarrassing etiquette errors in messages being sent.

Benefits: This solution complements other forms of email etiquette training with "Just in Time" coaching at the moment an error is actually made, thus preventing the error and reinforcing the desirable behavior.

Caveats: One should remember that changing the behavior of a mail client could – if something goes wrong – put at risk a key

enterprise application. It is therefore advisable to seek the opinion of one's IT group as to the security and reliability implications of this tool before introducing it into an enterprise environment.

Implementation: This product implements 7 different alerts (see link below). The current version works with MS Outlook 2000, 2002/XP, 2003, 2007, 2010 and 2013 (32 bit and 64 bit), on all versions of Windows up to Windows 8.

Related links: Product page: http://bit.ly/IOCR010. Product screenshots: http://bit.ly/IOCR011.

♦ **Deploy a manual reputation system for sender behavior**

What: Implement a system that allows recipients to rate senders based on message quality, and reward or penalize senders based on their cumulative rating ("reputation").

Rewards would be public and publicized, e.g. by having management award prizes to the best senders in a group meeting. "Punishment" could be either public (as in a "Hall of Shame" award), or private (improvement advice delivered by the sender's direct manager in a one on one meeting).

Benefits: This crowd-driven system would create incentive to improve sending behavior, and contribute to everyone's active engagement in email overload improvement.

Caveats: Depending on the organization's culture, allowing people to rate coworkers, and publicly exposing such ratings, may or may not be accepted well. Care should be exercised in determining suitability to the local conditions.

Implementation: An ideal mechanism for submitting feedback would consist of "voting buttons" (in modern parlance, "Like" and "Dislike") added to the message itself, which would allow the process to be immediate and hassle-free. Alternatively, a web-based feedback form may be used. In either case, a back end for accumulating the ratings is needed. All this would need to be developed and integrated into the IT infrastructure in the organization.

Existing cases: The enterprise email client Hiri (q.v.) provides a dashboard that shows the quality of one's sent emails in terms of brevity, clarity and tone – based on feedback solicited from recipients via a small form at the end of each received message.

♦ **Deploy an automated reputation system for sender behavior**

What: implement a system that automatically rates senders based on computerized quality analysis of the messages they send (say, over a rolling or calendar month), and reward or penalize senders based on their rating ("reputation").

The monitoring would be done at the server by examining parameters of clarity, brevity, number of recipients, use of the "Action Message" format (q.v.), and other quality criteria.

Rewards would be public and publicized, e.g. by having management award prizes to the best senders in a group meeting. "Punishment" could be either public (as in a "Hall of Shame" award), or private (improvement advice delivered by the sender's direct manager in a one on one meeting).

Benefits: This system would create incentive to improve sending behavior. Unlike human-rated reputation, automatic rating is objective and lacks the potential for creating animosity among the people involved; and it would have a much higher coverage because every message would be considered.

Caveats: Some senders may be required by their job definition to send email that may be seen as lower quality. It would be useful to have mechanisms to manage exceptions in such cases.

Implementation: This solution would require software on the server to monitor the email quality for each sender, and a mechanism (and policy) for rewards and penalties.

A system of this nature is complex, and would need to be developed from scratch – no mean feat. A possible collaboration with industry or academic researchers may be indicated. For example, the technology in MessageMind InboxMind (q.v.) may be suited for extracting the quality data.

Variations: A particularly advanced implementation of this concept would automatically reward the sender of a high quality email by making the message more likely to be read by the recipient. For example, high quality messages might be highlighted in a special color (or with a special "badge" icon) in the recipient's Inbox. This assumes a suitable client add-in is deployed across the organization.

♦ **Expose the sender to the estimated cost impact of their behavior**

What: implement a system that computes an indicator of the impact of an email message on its recipients, and displays it to the sender. The indicator could be in units of total time (to read the message, based on its length), or in money (time x average hourly rate). Most important, this would be summed up for all recipients, so large distribution lists or Reply to All messages would get a high number. The indicator would be incremented with each new message, and shown as a small "meter" at a corner of the mail client window indicating the cumulative cost of their outgoing messages during the current week or month.

Benefits: Even if kept out of people's face, a "meter" like this could lead to interesting results if it encouraged "soul searching" and self-restraint.

Caveats: It is equally possible that people would get used to the meter and ignore it after a while. The chances of success would rise if this solution were implemented as a small part of a wider information overload reduction program.

See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client that would intercept the Send click, calculate the indicator and display it.

Variations: The indicator could also be displayed for each message just as it is about to be sent, allowing the sender to take action to reduce it (by removing recipients or shortening the message).

Existing cases: Colruyt Group, a large Belgian retail corporation, implemented this solution. When you sent an email in the company you got a note that told you how much the message would cost the company, taking into account the number of recipients and the length of the message. Subsequently this was modified to show the cost when the message was printed.

4. Solutions that mitigate Interruptions

This category includes solutions that aim to reduce the number of interruptions encountered during the workday, or to reduce the harm caused by a given interruption to the knowledge worker's ability to work effectively. These include group agreements that modify behavior and expectations, and technological tools that intervene in the flow of interrupts. Since an interruption can be bad or good for its recipient depending on the specific context, some of the solutions in this category go so far as to discern the context of the interruption and control its routing accordingly.

4.1. Interruption control through group agreements

♦ **Apply "Quiet Time" periods across the group**

Learn more:
http://bit.ly/IOCR027

What: Specify time slots during the week (e.g. "every Monday and Wednesday from 8:00 to 13:00") when people in the group will each work in isolation at their desks, without disturbing each other, with their phones switched over to voice mail, and without pulling in new email messages.

Benefits: This method guarantees people a few time periods of contiguous, focused "thinking time", in which they can concentrate on their work – especially creative work – without the many negative impacts of incoming interruptions.

Caveats: Unless this agreement and its rationale are communicated effectively to others outside the group, these others may complain when people are unavailable to them.

Another potential issue arises when the participants take the ban on interruptions too literally: there are urgent cases where interrupting a coworker is both necessary and warranted. The group should be instructed to apply common sense in such cases; otherwise the entire implementation may be undermined.

Implementation: This is a simple, low-tech solution: the main thing is to craft the group agreement with full involvement and buy-in of the participants, and to communicate it well. Depending on the local culture it may be advisable to provide people with Do-not-Disturb signs proclaiming "I am on Quiet Time" to hang on or near their doors.

Note that the requirement to not pull in new incoming messages does not mean avoiding use of one's email client; previously pulled messages, and ones archived in folders, may be necessary in the performance of the focused work. The intent is that people have

their mail in "Offline mode" (if they use a mail system, such as MS Outlook, that allows it).

Once launched, this solution requires attentive monitoring, to ensure that people don't slip back to their old accustomed ways.

Variations: In addition to doing this as a group agreement, it is possible for many people – depending on their job type, social context and personal tendency – to adopt it individually as a personal choice. Some senior managers, notably Warren Buffett, are known to do this.

It is conceptually possible to support the requirement of working offline by turning off delivery of new mail at the server during the quiet hours, although this is rather radical.

Some implementations block the quiet periods on people's calendars, to prevent others from setting meetings during Quiet Time.

Existing cases: The best documented implementation of Quiet Time was done by Prof. Leslie Perlow, who had conducted a three morning per week Quiet Time experiment in a development team at a large computer hardware firm in the US, with visible productivity gains. This is described in her book *Finding Time* (see link below).

The author conducted a one morning per week pilot in an engineering group at Intel, with gratifying results.

Intel's 4,000-person Software and Services Group ran a pilot of blocking and tracking a few hours per week as "think time". Preliminary results reported were positive.

Related links:

Leslie A. Perlow, *Finding Time: How corporations, individuals and families can benefit from new work practices*, ISBN 0801484456: http://bit.ly/IOCR026.

Intel SSG "think time" reported in the Wall Street Journal: http://on.wsj.com/14iftQn.

The Quiet Time solution

This distinctly "low-tech" solution makes so much sense that it is surprising how rare it is. The basic concept of setting aside some focus time is well known at the individual level; applying it simultaneously across an entire team requires a degree of courage,

and a willingness to change the existing norms, that are evidently harder to come by.

This is a pity, because the data is clear: a few quiet time slots a week can make a real difference to bottom line results. The experiment documented by Prof. Perlow led directly to a new printer reaching the market well ahead of the expected time. It doesn't get any better than that: give your knowledge workers some time to concentrate, and you'll see better business results! Just remember that this is not a "launch and forget" initiative: the author's experience is that it requires careful planning, communication, monitoring and possibly course corrections to fine tune the methodology to the group's needs.

♦ **Redefine the email response policy (SLA) in the group**

What: Define a group policy (a.k.a. SLA – Service Level Agreement) that moderates the usual expectation that email messages must be replied to immediately, both during and (especially) after work hours. A typical policy might specify that non-urgent messages may be legitimately replied to within one business day (with special provisions for weekends), and that no non-urgent email may be processed after work hours.

Benefits: This solution, if the policy is in fact adhered to, can solve the problem of "continuous partial attention", and give people the ability to focus on their work without constantly checking for new email. The potential benefits are significant.

In addition, applying it to mail arriving after work hours can help restore Work/Life balance.

Caveats: The main risk is that the solution will not work because people will not actually follow the policy. The behavior change it requires goes against an addictive behavior that is very hard to quit.

Implementation: To improve the likelihood of success, it is best to define the policy in a process involving the entire affected group. Even then, it is necessary to closely monitor adoption of the new behavior. Active role modeling by the group's manager can help.

It is particularly worthwhile to focus on avoidance of instant response after work hours and in the weekend.

Existing cases: The author has witnessed decisions of this kind adopted at a number of midsized organizations, with suitable employee communications to encourage compliance.

♦ **Ban cellphones from the premises**

What: Define and enforce a policy that forbids or limits the use of cellphones inside company buildings.

Benefits: This can significantly reduce both interruptions of people being called and the noise pollution affecting their coworkers, especially in open space offices.

Caveats: If use of a cellphone is required for performing one's job, there is a direct conflict with such a policy. Also, with the growing ubiquity of cellular devices, employees may object on grounds of needing them to stay in touch with friends and family.

Implementation: To implement this solution, a very firm edict from senior management is a necessary condition. Communicating the policy and its rationale is critical too.

"No cellphone use" signs need to be posted at entrances to the building.

Variations: A less severe option is to require all cellphones in the building to be in Vibrate or Silent mode, so as to minimize noise pollution caused by ringing.

Existing cases: Although this is an unusual solution in today's reality, it has actually been implemented fully in two Israeli companies known to the author – a small start-up and a mid-sized hi-tech company. A third, larger company went through a less absolute but very sincere management effort to define the premises as a "quiet building".

♦ **Ban cellphone use in meetings**

What: Define and enforce a policy that forbids the use of cellphones during meetings.

Benefits: Eliminates interruptions by incoming and outgoing calls.

Caveats: With many meetings conducted virtually, remote participants can easily "cheat".

For a look at a dissenting view on this solution, see http://bit.ly/IOCR028

If some attendees are in an emergency "on call" job position, there is a direct conflict with such a policy. Also, some attendees may object on grounds of needing connectivity for any emergency calls from their families.

Implementation: This lends itself well to application in small teams (e.g. a management staff) that meet regularly. It can be driven as a joint team decision that becomes part of the ground rules for the team.

In a more aggressive scenario, a senior manager can make the decision and drive its acceptance across their entire organization; then, at least for Face to Face meetings, the senior manager present or the meeting chairperson must enforce the decision.

Variations: A less severe option is to still permit SMS reception, thus allowing emergency access to attendees and defusing some of their objections.

Existing cases: US President Barack Obama, no stranger to mobile technology, runs cabinet meetings where all cellphones and smartphones must be tagged and left in a basket at the door. A similar policy, using the same method to identify the phones, has been observed in action by the author in staff meetings at a midsized US company. And the WSJ reports that a director at eBay has instituted a no-device policy during some team meetings, a change that she says has made gatherings more efficient.

Related links: Solution as seen in President Obama's cabinet: http://bit.ly/IOCR029.

♦ **Forbid email processing during meetings**

What: Define and enforce a policy that forbids working on email during meetings.

Benefits: Eliminates the now ubiquitous practice of "doing email" in meetings, which is universally devastating to the effectiveness of those meetings.

Caveats: Unless notebook use is completely forbidden – which may conflict with their legitimate use for recording or accessing information during the meeting – it is difficult to verify compliance. Also, with many meetings conducted virtually, remote participants can easily "cheat".

Implementation: This lends itself well to application in small teams (e.g. a management staff) that meets regularly. It can be driven as a joint team decision that becomes part of the ground rules for the team.

In a more aggressive scenario, a senior manager can make the decision and drive its acceptance across their entire organization; then, at least for Face to Face meetings, the senior manager present or the meeting chairperson must enforce the decision.

Variations: A good compromise between requiring that all notebooks in the meeting be closed and allowing everyone to use their computers (for non-mail use) would be to designate one

attendee as minutes taker and have everyone else close their notebooks.

Existing cases: The author has encountered "no mail" meeting policies in various teams. At Ceragon, a global hi-tech company of some 1200 people, use of Notebooks in staff meetings is banned, as is email reply on smartphones. However, he also saw cases where the manager in charge resists enacting such a policy, no doubt because they are so overloaded that they wish to process email themselves.

♦ **Remove telephones from the work environment**

What: Remove landline telephones from the office space occupied by people who should concentrate on their work.

Benefits: No telephones – no interruptions. Of course this solution is possible only in specific job types, notably programmers, whose need for concentration (getting in "The Flow") is legendary, and who have no responsibilities requiring frequent communication.

Caveats: For many job functions telephony is part of the job, and for such jobs this solution would be destructive.

Implementation: Just remove the telephones (and remove reference to them in any directories and business cards). Leave people with cellphones as their primary voice channel, but have them turn them to Silent when in the work space.

Existing cases: The author heard this one from a manager of IT systems in a financial organization, who had a group of programmers working for her. She removed the (landline) telephones from their rooms, and also made it known that these people were not to be interrupted by other means. The efficiency of this team had visibly improved relative to earlier times.

♦ **Tell employees to stay off interrupting devices after hours**

What: Communicate a policy asking employees to avoid checking email on their mobile devices during evenings and weekends.

Benefits: Keeping mobile devices away from personal and family time can do wonders to restore Work/Life balance.

Caveats: Many people use their work mobile device for personal cellular use, which may interfere with the practicality of this solution. Others simply lack the willpower to avoid checking email, even if told to do so. Both problems are addressed by the better, if

Although individuals could disconnect on their own, many are afraid they'll be penalized for it. It is therefore critical that the employer communicate a clear policy supporting the disconnection.

more complicated, solution of shutting down email transport to the devices at the server end, as applied at Volkswagen (q.v.).

Some provision for emergencies needs to be put in place, with a clear definition of what constitutes an emergency and how to communicate it to an employee at home (e.g., by a telephone call).

Variations: The author knows of a user who had set his BlackBerry's Auto-On/Off function to have the device shut down at dinner and start up after breakfast, thus automating the provision of quiet personal time.

Existing cases: Organizations reported to have told employees to not check email at home include consulting firm The Advisory Board, PricewaterhouseCoopers, and the Citizenship and Immigration department of the Canadian government. There are a number of others known to the author to have taken similar steps.

♦ **"Think week": Send employees off-site without connectivity**

What: Send employees off-site for a few days at a time, without email or cellphones, in order to enable them to think and work without interruptions.

Benefits: In addition to the direct benefit of giving them Quiet Time, this unusual act conveys a serious message to the employees involved.

Caveats: Left to themselves, employees may easily "cheat". It might therefore makes more sense to implement this solution as a group retreat outing, where peer pressure and monitoring come into play.

Existing cases: IO expert Edward Hallowell reported this custom as taking place in a large fund in New York, which grants employees a few "thinking days" each month.

Bill Gates is known to take annual "Think Weeks", seven-day stretches at a retreat away from the pressures of day to day work, where he reads and ponders future strategy for Microsoft.

The author is reminded of a practice he'd witnessed in a large US consulting firm in the nineties: a manager there had forced his employees to telecommute one day a week for the express reason that he wanted them "to work" – i.e. to focus undisturbed, away from the busy office environment. Of course, that was before today's level of connectivity.

Related links: Interview with Dr. Hallowell: http://cnet.co/17avvYs.

> It is a fact that some of the author's most creative and impactful ideas as a corporate change agent were hatched during business trips in the years before WiFi became available in hotel rooms. The combination of a change of environment during the day and having time to think in the evenings was very effective!
>
> See http://bit.ly/IOCR044 for results of a study on the beneficial effects of an email-free week.

4.2. Interruption delivery blockers

♦ **Implement an auto-reverting "Do not disturb" button**

What: Implement in software a control that turns off incoming message alerts for a preset, user-selected time. After the time has elapsed, alerts automatically revert to their normal state.

Benefits: This solution assists all Quiet Time implementations while removing a key concern implicit in the usual all-or-nothing setting that turns off message alerts. This is the worry that if one turns them off to get some focus time, one will forget to turn them back on later (the same concern exists for putting cellphones on "Silent" in a meeting). The "auto-revert" aspect of this solution solves this issue, and allows a user to secure just as much quiet time as needed.

Caveats: See "Notes on developing software solutions" in the appendix.

Implementation: Technically this requires an add-in to the mail client.

Variations: It would make good sense to include blocking of other channels besides email, notably Instant Messaging.

Existing cases: This functionality is included in ClearContext Pro (q.v.) for use with MS Outlook.

♦ **Product: MyFocus – a hardware/software "Do not disturb" button**

What: MyFocus by CanFocus Technologies is a collection of buttons – one is a large physical button you connect to your computer, while the others are software buttons in applications for your computer and for your smartphone. All the buttons are linked, so you can turn them all to be Green or Red (the physical button

It is interesting to note that Ford Motor Company has included a hardware "Do not disturb" button in some recent car models, which allows the driver to block incoming phone calls and text-message alerts while the vehicle is moving.

Learn more: http://bit.ly/IOCR051.

actually changes the color of its illuminated rim). Once you make the buttons Red, your Email, Facebook, Skype, Instant messaging, and other incoming communications are put in a holding pattern: none of them are delivered to you until you go Green again. Meanwhile your coworkers can tell, from the illuminated button on your desk, whether you wish to be left alone.

Benefits: This solution addresses the two major sources of interruptions: in addition to holding incoming message delivery when you need to focus, the visible indicator wards off interruptions by coworkers.

Caveats: As of October 2013 this product is in beta. It will be interesting to see whether coworkers will in fact respect the red state of the button, a matter which may depend on the local culture in each workplace.

Implementation: The physical button connects to the computer's USB port. The software component is planned to work on all common mobile and desktop platforms and email applications.

Vendor link: http://www.canfocus.com.

♦ **Product: Freedom – a temporary internet blocker**

What: Freedom by Eighty Percent Solutions is an application that locks you away from the internet on Mac or Windows computers for a time you specify (up to 8 hours). You'll need to reboot if you want to get back online before the time you specified is up. This is intentional, to prevent the temptation to cheat.

Benefits: This is more comprehensive than the "Do not Disturb" button (q.v.), as it disables all networking and not only new message alerts. It is the ultimate way to enforce quiet time when no online activity is needed.

Caveats: This solution is not suitable for job types where demands for online interaction must be serviced in real time, nor for work where one needs to consult the Web.

Vendor link: http://macfreedom.com.

♦ **Product: Temptation Blocker – a temporary application blocker**

What: Temptation Blocker is an open source program that lets you lock yourself out of specific applications for a specified period of time. A window displays how much time remains. In order to

unblock a program prematurely you must enter a 32 character code, as a disincentive.

Benefits: This is a more versatile implementation of a "Do not Disturb" button (q.v.). It allows the user to disable any application(s) rather than only email or network applications, and it can be disabled prematurely with less effort than Freedom (q.v.) – although this last can be seen as a either a pro or a con.

Implementation: This is an Open Source application for MS Windows. As of August 2013 it is in beta.

Vendor link: http://sourceforge.net/projects/temptblocker.

♦ **Product: LeechBlock – a distracting web site blocker**

What: LeechBlock by James Anderson is a Firefox browser add-on that blocks access to time wasting sites you predefine at times/durations you predefine. You can also set a password or random access code for LeechBlock's settings as a disincentive to override it.

Benefits: This tool can help users avoid the temptation of web sites they know to be time wasters, during parts of the day they want to reserve for a focus on work.

Implementation: available (only) as an add-on for Firefox.

Vendor link: http://www.proginosko.com/leechblock.html.

♦ **Product: Inbox Pause – adds a "Pause" button to Gmail.**

What: Inbox Pause by Baydin Software adds a "Pause" button to Gmail. Clicking that button stops new messages from arriving in the Inbox. Optionally, the senders can be notified that their messages are being held. Clicking an "unpause" button reverts functionality to normal and causes the messages that were previously held to be delivered into the inbox.

Benefits: This straightforward solution allows one to secure at will the distraction-free focus required for "thinking work".

Caveats: The vendor notes that this was developed as a hackathon project, so its stability is not guaranteed.

Implementation: This is a Gmail extension for the Chrome browser.

Vendor link: http://inboxpause.com.

♦ **Automate distraction-blocking in meetings**

What: An interesting patent application filed by IBM proposes a system that allows one to send people a calendar meeting invite that specifies no distractions are allowed during the meeting. Once the attendee accepts, their computer will automatically suspend non-event related activities while the meeting is in progress.

Benefits: Basically this is a computerized implementation of the command "everyone, close your Notebooks!" at the start of a meeting. It has the extra advantage that attendees can still use their computers for activities related to the meeting, but with no incoming distractions.

Existing cases: This is a patent application, which has yet to be developed into a product.

Related links: Patent application: http://bit.ly/IOCR038.

♦ **Batch email (or non-urgent email) at the server and deliver it hourly**

What: Change settings at the server so that messages will be batched and only sent to the clients once an hour. A workaround for identifying urgent messages and exempting them from the delay could be included.

Benefits: This would make it impossible for people to check email every few minutes, and enable an inevitable degree of focus time in between batches.

Caveats: Urgent messages may be delayed up to one hour. Given the current habits of users, this would raise severe objections. To overcome some of the worst objections, a filter could be implemented that would let through urgent messages (in this case, even the basic "importance" flag could be used).

Implementation: Implementing this idea would require software changes on the server.

Variations: One could allow senders to request exceptions (instant delivery) for specific messages, with a mechanism to de-motivate abuse, such as charging a fee or reducing a quota for instant delivery (similar to traditional express mail). This would require software changes on the client.

The batching can be done on a schedule less than hourly, e.g. 3 or 4 predefined times a day.

Existing cases: Although it should be technically feasible, to the author's knowledge this solution has never been deployed. Note however the similarity to Volkswagen's solution of blocking email delivery to BlackBerries after work hours (q.v.), which amounts in essence to batching night-time email for morning delivery.

♦ **Turn email transport off at the server after hours**

What: Program the email servers to stop delivering mail to employees outside of normal work hours.

Benefits: Few companies have the resolve to tell employees to stay off their email at home, but when they do, it rarely works – today's workers are too addicted to checking their emails, with dire results for their family life and personal wellbeing. Actually shutting down the email servers can achieve the desired disconnection and cure the addiction.

Caveats: Enforcing such a block unilaterally is likely to attract some criticism. It is necessary to communicate the reason for this change and engage the affected employees. In the Volkswagen case (see below) the workers' union was actively involved in defining the new policy.

Implementation: Details depend on the system used, but any IT group will have the competence to make this solution happen.

Existing cases: A famous case is that of automaker Volkswagen, who applied it to its workers in Germany (excluding senior managers) in 2011. The BlackBerry servers in the company stop routing emails 30 minutes after the end of employees' shifts, and then start again 30 minutes before they return to work. Users can still use their devices to make phone calls.

Related links: http://bit.ly/IOCR043.

4.3. Contextual interruption management

 "Contextual management" here refers to routing interruptions based on the context (that is, the current task, priorities and relationships) of the recipient. This is the sort of screening logic that used to be applied through secretaries, as in "Whenever I'm in a meeting with the boss hold all calls – unless the call is related to whatever we're discussing, or the caller is more senior than both of us". For a software tool to handle such distinctions requires it to embody considerable knowledge about the user, their coworkers and their activity.

The reason this is important is that an interruption can be bad or good for its recipient depending on the specific context; in particular, if the incoming information is related to the current task the interruption may have a positive net effect. Automatic or semi-automatic ways of blocking, deferring or passing interruptions based on context form an interesting part of the IO R&D scene.

♦ **Develop a contextual alert routing system ("Better Toaster")**

What: Deploy a software tool that intercepts incoming messages (email and/or phone) and decides whether to interrupt the recipient (with a popup alert or a ring) or not, based on the source and content of the message and on the recipient's current context (location, open applications, calendar information, auditory signals, and more).

For example, the alert for a message from Jack to Jill may be suppressed if Jill is in the middle of a meeting, is currently speaking, and in the past had been slow to open Jack's emails.

The name "better toaster" stems from the appearance of Outlook message alerts, which pop up like toasts. Outlook's "toaster" allows turning all alerts on or off; this solution can fine tune this behavior based on the precise context of each message.

Benefits: This solution replaces the usual all-or-nothing user control over email and phone delivery with a superior ability to choose which messages will interrupt in real time, and which will wait for later processing. With the current interrupt rate for knowledge workers averaging 20 per hour, the advantage is clear.

Variations: One could build a system that would go beyond blocking notifications to actually deferring the delivery of non-urgent messages to the inbox. That is, if the user is in a busy state, the system would disable mail delivery to them until they're more available to pay attention to it – except for messages deemed important.

One could then add the feature that a sender of a message not clearing the bar would be notified that their message was being delayed – possibly with the option to override the system's decision.

Implementation: This functionality is not available commercially yet. See below two non-commercial implementations.

Existing cases: Two companies have developed this functionality in-house:

Microsoft Research has developed "Priorities", described in the paper cited below. This system provides a full "Attentional user interface", which monitors user status and behavior in real time, learns from past behavior, and provides comprehensive interruption control.

Morgan Stanley has developed an experimental system called "Sift", which senses the user's work context and prioritizes messages by various parameters, limiting toasts to important ones only.

Related links: Models of Attention in Computing and Communication: From Principles to Applications, by E. Horvitz et al., Microsoft Research: http://bit.ly/IOCR030

♦ **Develop a Bounded Deferral implementation**

What: Microsoft Research has published studies of a "Bounded Deferral" model for delivering incoming message notifications. This model involves an algorithm for testing whether notifications should be delivered to the user immediately on arrival, should wait until the user is free, or should wait for a specific amount of time for delivery – based on the cost of the interruption in the context of the current user state.

Benefits: This is a valuable research direction, which could minimize the impact of interruptions by balancing the need for the notification with the need for concentration.

Variations: Another research project from the same Microsoft team describes BusyBody, an experimental tool that intermittently asks users to assess their perceived interruptability during a training phase, and then builds decision-theoretic models with the ability to predict the cost of interrupting the user. These models are used to compute the expected cost of interruptions, providing a mediator for incoming notifications based on a consideration of a user's current context.

Implementation: This is a research project; the functionality is not available commercially.

Related links:

Principles of Bounded Deferral for Balancing Information Awareness with Interruption, by D. Achloptas and E. Horvitz, Microsoft Research: http://bit.ly/IOCR031.

BusyBody: Creating and Fielding Personalized Models of the Cost of Interruption, by E. Horvitz et al., Microsoft Research: http://bit.ly/IOCR032.

♦ **Set expectations that interruptors must respect recipients' context**

What: Instill in the organization the expectation that interrupting a coworker should be done with some forethought, taking into account their current activity. For example, if intending to pop into a cubicle and ask a question, peek first to see whether the person is engrossed in thinking work and defer the interruption accordingly. Another example: If you do interrupt someone (say, via the telephone) and can't see what they're doing, always start with "Got a minute?" or "Is this a good time?"

Benefits: Interrupting someone while they're focusing on thinking work can derail them for many minutes after the interruption ends, so timing interruptions for less intense moments can really help.

Caveats: Unfortunately, such consideration is hardly built into the existing culture in most companies. Changing culture is always difficult; it is important to define the new expectations carefully, otherwise they may go too far and curtail necessary interpersonal communication, or be rejected and ignored.

Implementation: Defining the exact expectations should be done with care, involving the actual users in the process. Communication of the new expectations should explain carefully when they apply and when they can be waived (primarily in urgent situations).

Existing cases: This expectation was included in "Instant Messaging Best Use", a set of best practices driven across Intel Corporation. It was summarized in training materials as
Knock before you enter: inquire if the other party is willing to IM, by initiating contact with "Have a moment?" or "Quick Question?" or "Are you free?"

An unsuccessful but thought provoking product, the short lived *Courteous.ly* provided a free service for Gmail that would let your contacts know when your email load is high, so they could hold off on emailing you. This is an online attempt to enable the sender to peek into the recipient's cubicle and see how busy they were. One might conjecture that this failed to catch because of the asynchronous nature of email, which makes this a poor analogy to real time busy-ness.

♦ **BrainYno – a mentally activated "Do not Disturb" button**

What: BrainYno's system uses a simple brainwave sensor worn on the head to sense a user's state of thought. When a state of higher concentration is detected, it blocks the user's cellphone from ringing, transferring the call instead to voicemail. This cutting edge experimental technology was demonstrated successfully in January 2013 at the AT&T Developers Summit in Las Vegas.

Benefits: In principle, a system that can defer or route interruptions based on the intended recipient's actual real time brain state could be immensely beneficial to knowledge workers. Where solutions like Quiet Time (q.v.) use a brute force approach – blocking entire time chunks – a solution like BrainYno's can limit the blocking only to the times when one is really in need of quiet.

Caveats: This solution is in early R&D, and it is clear that it will need to prove two main points in order to become a viable product: that a simple sensor can reliably achieve the required discrimination of mental state, and that people will actually agree to use such an unusual system in day to day work.

Implementation: The system requires wearing a single electrode and related electronics on one's head, which interfaces with the cellphone through a Bluetooth link. Over time this could be integrated into a Bluetooth earpiece form factor, or a set of tech glasses.

Vendor link: http://www.brainyno.com.

♦ **Promote use of "Do not disturb" signs**

What: Produce good looking, detachable "Do not disturb" signs that people can post on their closed doors or open cubicle doorways. Educate everyone to respect these signs.

Benefits: If used selectively, only when the user is doing focused work that requires concentration without interruption, such signs may deter some lower-urgency interruptions by coworkers.

Caveats: Depending on the local culture, the signs may be seen in a negative light, as either an annoyance to the coworker or a slight to the user. It can help if the rationale for the signs and an agreement to respect them are discussed and communicated across the group in advance.

Implementation: The sign can take many physical forms, from the classic door handle sign form factor used in hotels to a plastic chain with a sign on it which can be hung across a cubicle entrance.

Simple signs can be produced from cardboard or laminated paper. A way to attach and remove the sign is needed; depending on the type of door and frame, this can vary from a hook and eyelet arrangement to a Velcro backing.

The content of the sign (text and/or graphic) should be defined with as much humor as the culture will support, to keep the interaction with the would-be intruder friendly.

Variations: CubeGuard sells a retractable cubicle door barrier tape, which can be ordered with custom designs branded to your own IO mitigation program.

Existing cases: The use of such signs has been around in open space office areas since at least the eighties, notably when managers needed to write sensitive documents like employee reviews. Use in a coordinated manner as part of an IO mitigation drive has been tried in a Quiet Time experiment at Intel, but whereas the overall experiment was successful, the population involved stopped using the signs provided because they were considered "childish".

Related links: CubeGuard's site: http://www.cubeguard.com.

Tim Ferris, in his book "The Four Hour Workweek", irreverently suggests one wear a set of headphones while working (even without listening to anything) – to further discourage interruptions. It may actually work…

♦ **Define "No Interruption Zones" in the workplace**

What: Mark off areas in the workplace in which it is forbidden to interrupt people. Unlike "Do not disturb" signs (q.v.), which are displayed or not based on activity, this solution is permanent – the assumption is that the nature of the activity performed in those areas is such that whenever a person is inside them it is forbidden to interrupt them. The interruption-free areas can be marked off with signs, physical barriers (e.g. chains), and/or distinctive marking tape on the floor.

Benefits: For activity types where interruption has dire results, and that are always performed in a specific location, this solution has clear value.

Implementation: It is critical to complement the marking of the areas with a clear policy and an education drive that will communicate the expectations involved.

Existing cases: This solution has been piloted in a study in two Intensive Care Units in a US hospital, where the No Interruption Zones were marked with red tape on the floor in front of medication preparation stations. The intent was to reduce potentially fatal errors caused by distracting the nurses during this critical activity. A reduction of 40% in interruptions was observed.

Similar implementations using permanent "Do not disturb – Medication safety zone" signs and the like were reported in use in hospitals in Canada and the US, also with positive outcomes.

Related links: Report on the ICU study (includes additional references): http://bit.ly/IOCR047.

♦ **Issue "No Interruption Wear" to workers executing critical tasks**

What: Define an agreed clothing standard that signifies the person wearing it may not be interrupted, and set a policy to enforce this usage. The standard may involve wearing a coat or vest of a specified (and attention-grabbing) color, a distinctive colored sash, etc. These items may also be marked with a warning, e.g. "Caution: Medication Administration in Progress".

Benefits: For activity types where interruption has dire results, this solution has clear value.

Caveats: Resistance to wearing unaccustomed items is to be expected and must be addressed with appropriate care.

Implementation: It is critical to complement the deployment with a clear policy and an education drive that will communicate the expectations involved.

Existing cases: This solution has been implemented in a number of hospitals in the US and Canada, with the intent to reduce potentially fatal errors caused by distracting the nurses during medication administration activity. A reduction in error rates has been reported.

Related links: Kaiser South SF Medical Center's implementation: http://bit.ly/IOCR048.

4.4. Other interruption mitigation solutions

♦ **Turn incoming email alerts off by default**

What: Set the email application across the organization to <u>not</u> alert users when a new message arrives. The default "out of the box" setting in MS Outlook is to show "You've got mail" alerts, and most users unthinkingly leave this so; by setting the default to off, users have to make an intentional effort to turn them back on.

Benefits: The various visible and audible incoming message alerts are a notorious cause of distraction to knowledge workers, and can completely foil strategies like checking email at preset times of the

day, Quiet Time, etc. Turning them off should certainly be the default.

Caveats: This could result in complaints when users think they needed instant alert to some message, and missed it. To avoid complaints, it is important to notify all users of the change and of their ability to reset the alerts to *On* for their local machine if they wish.

Implementation: This change can usually be applied when first deploying a new email application (or a new version of one), but it can (and should) also be retrofitted to existing systems. This can be done centrally, "down the wire", by the IT group.

Existing cases: This was implemented (retroactively) at Ceragon, a global hi-tech company of some 1200 people.

> The "You've got mail" alert, in the form of a funny animated envelope, was embraced enthusiastically by Hollywood. The absurdity of the idea that a busy manager who receives 300 emails a day will have the time to watch 300 alerts, much less 300 pirouetting envelopes, never occurred to those scriptwriters!

♦ **Designate privacy rooms in the workplace**

What: Designate certain rooms in the workplace as privacy areas; make it an accepted expectation that when a person is working in such a room they may not be interrupted.

Benefits: This solution is useful when it complements an open space office area. It is to be used when a person needs to write a report or do similar focused work to which interruptions are particularly detrimental. This replaces the common practice of taking refuge in a conference room (which, being larger and equipped for the purpose, is better reserved for meetings).

Caveats: Unless there are a sufficient number of these rooms, they could be overwhelmed by demand. It is also important to have a clear policy that they are only to be used for "thinking work" and not as a cubicle replacement.

Implementation: If custom built for the purpose, the privacy rooms can be made quite small, designed to fit a single person and their notebook computer. It is, however, imperative that they have a door!

To illustrate the need for such interruption-free rooms, consider that cube dwellers have been known to stay at home, even to call in sick if that's what it took, in order to be able to generate content in peace.

Variations: If separate rooms are unavailable, it may be feasible to designate an area in the cafeteria or some open space section and clarify that they are to be respected as private.

Existing cases: Schaefer Advertising in Fort Worth, Texas, reportedly applied this solution. The agency uses an open-plan office space, but it also walled off three former patios on the front of the building to use as "privacy rooms".

♦ **Product: AwayFind – allows you to be reached when it really matters**

Learn more:
http://bit.ly/168GRiR

What: AwayFind allows you to stop checking email yet never miss an urgent message. It checks your incoming mail and only notifies you (on your mobile device, or via other channels) if a message is important per criteria you specify. It also allows people who need you urgently to fill a short web form that will likewise get a message through to you immediately. To that end, you put in your signature block a message such as "I check email a couple times daily; to reach me sooner, click here: <link to form>".

Benefits: AwayFind not only filters important messages for you, it also addresses the need to give people a way to reach you urgently when you apply the recommended practice of <u>not</u> checking your email every few minutes. It saves you from the worry that you may annoy your customers and coworkers when you adopt that productive practice.

Implementation: AwayFind does not require any software installation, but has mobile applications and software plug-ins that make for a richer user experience. It supports MS Exchange 2003–2010, Gmail, Google Apps, and most providers that use IMAP.

Vendor link: http://www.awayfind.com.

♦ **Log and analyze the nature of interruptions**

What: Monitor your interruptions for a week, by logging in writing their sources, timing, and necessity (or otherwise). Then analyze the log, classify the interruptions and identify the classes that should be eliminated.

Benefits: People are rarely aware of the extent and impact of the interruptions that reduce their productivity and creativity. By explicitly keeping track, you can collect the data that will give you the big picture and allow you to prioritize corrective action.

Implementation: It is key to record every single interruption for an entire week, thereby ensuring a valid statistical sample across all weekdays.

Existing cases: Mindtools.com, a career-skills website, has a downloadable log worksheet that can be used to good effect. According to the company more than 6,500 workers each year download this "Interrupters Log".

Related links: Mindtools log sheet: http://bit.ly/IOCR050.

5. Solutions that modify the Organizational Culture

This category includes solutions that aim to reduce information overload by educating employees to adopt new behaviors, thereby modifying the prevailing organizational culture that gives rise to IO.

5.1. Behavior change education drives

♦ **Deploy a full-scale organization-wide IO drive ("YourTime")**

What: *YourTime* was the name Intel gave to an organizational program it had developed to addresses behavior patterns, interpersonal interactions and technical skills in one complete company-wide drive. It did this by working from the top down and implementing the following three actions at each hierarchical level in the organization:

- Awareness Training, using a set of predefined management-sanctioned expectations.
- Group Discussion, geared toward identifying bad e-mail habits and their solutions.
- Skill Coaching, designed to enhance users' proficiency in using their e-mail client.

Benefits: A comprehensive program deployed across an entire organization can achieve a deeper impact than small-scale or localized interventions.

Caveats: Lessons learned at Intel show that one should plan to launch the program independently in sub-groups of up to a few thousand employees each, rather than regard the entire company as one monolithic target population.

Intel also found (not surprisingly) that a key factor in the success of the program at any level was the commitment of the manager leading the given target group.

Implementation: First, top management staff is approached and asked to buy into the program, ratify the management expectations, and commit to their roles as drivers of the program. Trained representatives of the program office help facilitate the required steps at this level. After the managers at one hierarchical level have gone through all three actions, they each champion the program within their own sub-organization, leading their staffs through the three steps, and so on throughout the organization, in "waterfall" fashion.

The program office keeps track of who did what, using an Intranet site where managers enter their completion status (and have access to program materials).

Obviously, the implementation in any given organization needs to be tailored to its specific culture and to the detailed aspects of IO in it; a serious study of the situation must precede the definition of the management expectations and the training content.

Variations: The skill training part can be effected through one on one coaching by a human trainer, or using a web based training tool, or by a combination of both.

Existing cases: Intel's implementation of this program in 2000 saw encouraging results. Post-implementation survey data in the EMEA region (some 1200 employees) found that 70% of employees in the region had participated in the program, and 80% of these participants viewed the program as beneficial. 71% of participants reported an improvement in their own e-mail effectiveness, 63% saw an improvement in the quality of e-mail they receive from others in the region, and 75% of the managers surveyed perceived an increase in the e-mail effectiveness of the groups they manage.

The YourTime program had attracted some attention in the business press, and had inspired similar programs in at least two other sizable corporations, one in Israel and one in North America. Results reported have been positive.

YourTime is a prime example of a comprehensive, large-scale, "heavy-duty" behavior training intervention. Although the waterfall model harnesses managers throughout the company to deliver much of the content and facilitation, thereby reducing the program's cost, it also means that a serious investment in development, coordination, tracking and program management is required. The results observed can easily justify this investment.

♦ **Deploy a lightweight IO drive ("Practice Smarter Email")**

What: "Practice Smarter Email", developed by Intel in 2006/7, was a lightweight program that strove to change behavior by disseminating in the organization over time a series of "Smart Resolutions" that each defines a simple, specific change in the group's behavior and management expectations regarding e-mail usage. These were complemented with a prize-bearing employee suggestion drive to collect additional IO-reducing techniques.

Benefits: This is a lightweight program suited to midsized groups (hundreds to a few thousand employees). The combination of periodic communications and employee engagement achieves the desired awareness with a minimal investment of resources.

Caveats: without follow-up action the impact would die out in one to two years. To prevent this, the program must be maintained to protect its lessons from being forgotten. As new employees join the organization, they need to be acquainted with the expectations of the "Smart Resolutions"; existing employees need to be reminded of them as well. Fortunately this can be done at relatively low cost.

Implementation: The deployment of the "Smart Resolutions" can be done through whatever employee communications channels are available; Intel used the organizational newsletter and an Intranet program portal. The employee suggestion drive may require a more complex software system, or it can be done by manual processing of ideas submitted to the program office.

Existing cases: Intel's implementation of this program in a 7000-person group showed favorable results when comparing the pre-implementation survey to one run after program completion. 67% of respondents rated the program's importance as high or very high. 53% of respondents said they had changed their behavior because of the program. Time devoted to e-mail processing has been reduced: the number of employees who said they spend 20 or more hours/week processing e-mail was 15%, down from 37% in the pre-survey. The reported percentage of unnecessary messages, and the time devoted to them, were also significantly reduced.

Example of a "smart resolution":

"Messages longer than one screenful of body text will have a one-paragraph Management Summary at the top".

When communicated, this succinct decision would be accompanied by a short paragraph explaining the rationale and some tips for crafting effective summaries.

♦ **Hitch a ride on an existing communications drive**

What: Add components of Information Overload education to an existing communication program in the organization, rather than develop and deploy a separate communication effort about IO.

Benefits: By deploying IO related content within a pre-existing employee communication drive, a company may prevent overloading employees with too many branded comm efforts at once. It may also be seen as a way of integrating IO mitigation into the overall company culture, rather than making it a standalone effort.

Caveats: Obviously, this approach may dilute the impact of the IO component. It is therefore important to monitor the effect closely.

Existing cases: This solution has been observed in a mid-sized hi-tech company, where the IO component has been integrated into a worldwide employee education drive.

♦ **Create employee awareness with an overview lecture**

What: Deliver a one-time lecture to employees, describing the nature, damage, causes and solutions of information overload. Such lectures are typically delivered by an outside speaker with knowledge in this field, or by an internal change agent who takes the time to develop this knowledge.

Benefits: This sort of lecture, while a far from comprehensive solution, can appeal to organizations reluctant to invest in a larger scale, more expensive program. It creates awareness, makes people take pause to think about their problem, and causes a subset of the attendees to adopt some practical ideas and improve their situation.

Existing cases: The author is often called upon to deliver this kind of lecture, and audience feedback is favorable; of special interest is feedback received months or years after the lecture, which shows a lasting change in people's approach to email processing.

Related links: The author's brochure for this lecture: http://bit.ly/IOCR045.

♦ **Deploy "Ten Commandments" style best practices reference cards**

What: Create a list of "commandments" – best practice guidelines – for the use of email and/or other IO generating tools, and disseminate it as a reference card to all current and new employees. An example of such a list is the Email Charter seen at http://emailcharter.org.

Benefits: A focused list of short best practices is easy to grasp; and having this as a physical reference card that can be stuck on an office wall in constant sight would make it memorable. Using the branding of the overall IO mitigation program in the design of the cards would also make the existence of the program evident to all who see multiple copies of these cards present all over an office area.

Caveats: Deploying these cards by themselves, in the absence of education to explain them, could lose much of the impact. Such cards are therefore best included as a component of a larger program.

It's amusing to note how entrenched the concept of "Ten Commandments" is in western culture... the expectation that there be ten of them means you will rarely see a list of nine or eleven tips in this context.

Implementation: Once the list of commandments is agreed upon, putting them on a small (say, A5 or smaller) sheet of cardboard stock with graphic design incorporating the program's brand, logo, or a relevant image is best left to a graphics professional.

These cards need to be given out to all employees as a program giveaway upon program launch, and in future to all new hires joining the organization (as part of a new hire orientation kit, if one exists).

Whether or not to title the card "Ten Commandments" should be determined with the corporate culture, and possible religious sensitivities, in mind.

Variations: The temptation exists to make the card a PDF document and allow people to print it out for themselves. This is generally a sub-optimal idea, as many employees will not do it, and others may end up with lower quality printouts than the professionally printed card. However, the list of commandments should definitely also be posted on the Intranet for online reading.

Existing cases: This has been done in multiple cases at Intel and in other companies.

♦ **Provide classroom training courses on email etiquette**

What: Include in the company's training curriculum instructor-led courses on email etiquette best practices.

Benefits: Nothing beats classroom training when it comes to imparting etiquette guidelines. Having a professional trainer deliver the practices and their rationale, with the possibility to discuss them in a peer group setting, can be quite effective.

Caveats: Obviously, this solution is expensive, like all training – and has a significant ROI, like most training. The temptation to replace classroom training with "sending people the material to read" is always there, and is best resisted.

Implementation: Implementation would typically be handled by the organization's training department following its usual practice. It is recommended to embed this training in the ongoing training curriculum, rather than see it as a one-shot event; that way future hires can also get trained without special effort.

Variations: Trainers can be internal, as long as someone puts together the required content, or the courses can be outsourced to any of the many providers specializing in delivery of email training.

Existing cases: This has been done in various companies.

♦ **Provide computer based training on email etiquette and skills**

What: Make available to employees a computer based training module that imparts to them the basic points of email etiquette and skills.

Benefits: Computer based training is obviously less expensive than instructor-led courses, and if designed well can be acceptably effective.

Caveats: It is hard to ensure people learn from a CBT module. They may decline to use it at all, or they may use it in a cursory manner without learning much. A test and tracking system should therefore be incorporated.

Implementation: The vehicle of choice for this solution is Web Based Training, although modules installed on the client have been in use in the past. The etiquette lessons must conform to the specific decisions and underlying culture of the organization, so it is best if the training module is developed specifically (or tailored) to meet these needs. Most large organizations have a training

development group able to handle this task in-house or by outsourcing.

To make these training modules attractive to employees, it is recommended to make them light and humorous, with some attributes of a game.

In developing this training, one should include a system for tracking who took the training and with what test results. Again, large organizations are likely to already have in place the required infrastructure for doing this.

Existing cases: Intel had developed in-house and deployed in 2000 a CBT tool named "Email Wizard" that was used as part of the YourTime program (q.v.).

The eMailAdvantage Assistant tool developed and used by BP in 2006 included etiquette training in the form of an animated flash video that conveyed the required lessons.

A large financial company in Israel had deployed a customized version of a commercial WBT on email effectiveness.

Related links: See commercially available training modules at http://bit.ly/IOCR033 and http://bit.ly/IOCR053.

5.2. Other solutions related to organizational culture

♦ **Encourage desired behaviors by senior manager role modeling**

What: Have a senior manager declare a personal war on IO and personally drive its reduction through role modeling and reaction to violations. Such a manager can declare that certain behaviors are no longer acceptable to them personally and they will avoid them while keeping close watch on subordinates' behavior.

Benefits: Senior managers have a unique ability to intervene, both because of their position of authority and because they typically receive a great volume of messages. Their resolute role modeling can trigger awareness to the need to mitigate IO and motivate subordinates to adopt their manager's behavior.

Existing cases: The author has met a number of senior executives that have taken this approach.

♦ **Use email sigs to reinforce email etiquette**

What: Encourage the addition of a short etiquette slogan (e.g., "Reduce email overload – avoid using Reply to All!") to people's

email signature blocks, similar to the more common practice of "green" messages ("Save a tree, don't print this message unnecessarily").

Benefits: Propagates etiquette expectations while getting people invested in them.

Caveats: Sig block content is often seen as a personal choice, so one should not edict this practice, only recommend it.

Implementation: Personalized sig blocks are available as a feature in most email programs.

Existing cases: The eMailAdvantage Assistant tool developed and used by BP in 2006 automatically added a signature to the end of each email ("I think before I S.E.N.D eMail - do you?", S.E.N.D. being the slogan of the IO drive the tool was a part of).

Application of this idea has been observed as a personal user initiative.

The solutions AwayFind (q.v.) and sentenc.es (q.v.) rely on adding a line to the sig block, which in addition to enabling their usage model also raises awareness.

♦ Assign ownership of the IO problem to the user

What: Drive a norm (set of expectations) that people own solving the IO problem: Recipients own having a clean Inbox, and Senders own not sending anyone mail they don't need.

Benefits: This set of expectations refutes the common attitude that Email Overload is inevitable and "just happens", and firmly assigns responsibility where it belongs. The implications are many – for example, it follows that a sender must comply with requests by recipients to get off a distribution list, while the recipient owns making such a request. Simply continuing to receive unneeded email, without taking action to stop it coming, will come to be seen as a violation of one's duty to one's workplace.

Implementation: This norm must be propagated as a management or group expectation, in the context of an email effectiveness drive.

Existing cases: This was incorporated in the Intel YourTime program (q.v.).

♦ **Delegitimize non-essential email**

What: Drive a perception that sending even a single non-essential email is a violation of one's responsibility to the team, the company and its stockholders.

Benefits: This is a strong message that can be used to justify added effort on the part of the sender to reduce the load on recipients. In particular, it would legitimize providing strong feedback to senders of unnecessary mail (it is easier to say "your message violated our group's decision" than to say "I don't want your message").

Caveats: Since this concept requires extra effort from senders, it may fail to take hold unless driven firmly by management.

Implementation: This norm must be propagated as a management or group expectation, in the context of an email effectiveness drive.

> The author once witnessed a reply from a junior employee to a company VP, saying "According to what Nathan taught us you shouldn't have copied me on this email". This employee would never have dared to rebuke the VP absent such a convenient justification!

6. Miscellaneous solutions

This category includes solutions that don't quite fit in any of the previous categories.

♦ **Replace the Email protocol with a To-Do protocol**

What: An idea from entrepreneur Paul Graham: Develop a completely new protocol to replace the existing email protocol. The new protocol should be designed primarily as a To-Do list protocol, not a messaging protocol, since most email is about getting the recipient to take some action. It should force the sender to give information about what they want one to do, why, and when; it should also give more power to the recipient to restrict what someone can put on their To-Do list.

Benefits: Email is a product of the sixties, and as such is dated and not up to the needs of today's communications. Redesigning it from scratch would certainly give us a much better tool, and a key improvement area would be the reduction of email overload by

enabling better screening and prioritization of the myriad action items included in messages.

Caveats: This is a huge change, hence very difficult. Still, to quote Graham: "On one hand, entrenched protocols are impossible to replace. On the other, it seems unlikely that people in 100 years will still be living in the same email hell we do now. And if email is going to get replaced eventually, why not now?"

Implementation: This change would require a major effort by the IETF (Internet Engineering Task Force), which manages the Internet's email standards.

Related links: See idea #2 in *Frighteningly ambitious startup ideas*, by Paul Graham: http://bit.ly/IOCR035.

Note that while changing the email protocol (so as to require it to include fields bearing task metadata) is a major standardization effort, it is still possible to achieve a similar effect locally in an email system deployed inside a given enterprise. A number of the software solutions described in this document provide functionality for turning messages into tasks, with varying degrees of user involvement.

♦ **Declare "Email Bankruptcy"**

What: When faced with a huge backlog of unread messages, delete or archive all of them except for a small, manageable number of the newest ones. A good example is when returning from an extended vacation (although in that case it would have been better to preempt the problem by setting up a rule to delete and notify the sender when a message arrives).

It's interesting to note that the popular iPhone app Mailbox (q.v.) has a feature that allows you to archive your entire inbox with one tap... a built-in support for applying email bankruptcy.

Benefits: This is often the only way to regain control of an inbox once it has thousands of emails in it. Of course one could – many do – ignore the older messages as they remain in the inbox, but the psychological effect of emptying the inbox, and the way it enables adopting an "Inbox Zero" methodology going forward, makes email bankruptcy a better alternative.

Caveats: Technically there's a risk of missing something important, but in reality one would never have read it anyway if it drowns in 5,000 other messages. In any event, archiving the backlog to a folder rather than deleting would allow recovery if necessity arises.

Implementation: although not necessary, it is advisable to notify one's correspondents that a bankruptcy has been declared, apologize for the necessity, and advise any with an important

message to resend it. This can be sent to all one's contacts, or (with the help of a script or rule) only to the senders affected by the bankruptcy.

Since a bankruptcy is by definition a rare and disruptive event, once you do it, you're strongly advised to adopt a better strategy for handling incoming mail, thereby averting a repeat.

Variations: Before eliminating the backlog, it is reasonable to sort it by sender and skim the messages from one's boss and a few other especially significant people, just in case.

Existing cases: The term *Email Bankruptcy* is usually attributed to author Lawrence Lessig who coined and applied it in 2004, and to Dr. Sherry Turkle in 2002. Since then it is seen in common use.

♦ **Deploy an Inbox Analyzer tool**

What: Provide a tool that analyzes the user's Inbox and provides them with insight into usage patterns and improvement opportunities (e.g., who do you predominantly send and receive email from? Who sends you the most attachments? Who sends you many more messages than you send them? How does your usage compare to the recommended parameters?)

Benefits: This solution can provide insight into the sources of one's email overload and other behavior patterns, leading to possible changes and improvements.

Caveats: See "Notes on developing software solutions" in the appendix.

Implementation: This solution requires a software module running either on the client or on the server. The output may be presented in its own user interface or may be dumped to a file, for instance a spreadsheet.

Variations: Generating the data is useful in itself, but it is possible to improve the impact by providing coaching to the user in a session where an IO expert examines the data jointly with them. This was done by BP when they deployed their version (see below).

Existing cases: BP had developed this solution in 2004, and put it to use inside the company as part of a comprehensive IO mitigation effort (including the coaching sessions to examine each user's data). This capability is also a part of eMailAdvantage Assistant, a more extensive Outlook Add-in developed and used by BP in 2006. More recently, feedback about individual email behavior is provided by KeyMail Insights from Colimetrics Software, is one

aspect of MessageMind InboxMind (q.v.), and is in development (as of August 2013) as Wingman, a feature under development by Mailbird.

♦ **Deploy a Sent Email Count widget**

What: Provide a small counter widget that shows on screen the total number of messages sent by the user in specific time periods (e.g. today, yesterday, this week and last week).

Benefits: Such a tool can give the user a picture of their impact on others in the organization, and if this is unreasonable, motivate them to keep their sending in check. The comparison of past and present periods can provide a progress indicator for improvement efforts.

Caveats: See "Notes on developing software solutions" in the appendix.

Implementation: This solution requires a software module running either on the client or on the server. The counter may be shown inside the email application or as a standalone widget.

Variations: It may be better to show the count of message copies rather than messages; i.e., a message sent to 10 recipients would count as 10, not 1.

Existing cases: This capability was incorporated in eMailAdvantage Assistant, an Outlook Add-in developed and used by BP in 2006.

♦ **Have senders pay recipients to read messages**

See the solution "Seriosity Attent" for a different and more refined take on the notion of auctioning attention.

What: Implement an arrangement where senders pay recipients to read their messages, i.e. the sender commits a sum (of actual money) to the recipient for reading the message. The amount committed is shown in the inbox, which can be sorted on it; in effect, senders are bidding for the recipient's attention to their messages. Upon opening the message the recipient can withdraw the money, or – if they find the message important to them as well as to the sender – they can send the money back with a reply.

Benefits: While this radical concept is thought provoking, it has yet to work in practice. The actual adoption and emergent behaviors that would ensue are by no means clear.

Caveats: It's a given that recipients can open the message and take the money without reading the content, so senders must accept that they're bidding for the act of clicking the message open, not more.

Existing cases: This solution was attempted by the short-lived online service attn.me (originally myattn.com) in 2010. Payment processing was done via PayPal. See the review in the link below to learn more.

Related links: A review of myattn.com: http://bit.ly/IOCR016.

♦ **Hold a "Back to Paper" week**

What: Declare a week in which everybody in the group has to avoid using email, replacing it with hand-written internal memos distributed in internal mail envelopes. Then reflect on how many messages were sent and what other means of communication were used.

Benefits: This is an interesting (if radical) way to expose the extent to which email had taken over our multiple communication needs, and to encourage consideration of the alternatives. If led properly by the group's manager, it can trigger serious thought and lead to further change once the week is over.

Caveats: This experiment can only be undertaken in a collocated group of moderate size, and should include clear provision for waiving the requirement in appropriate cases such as the interface to the outside world.

Existing cases: To the author's knowledge this solution has never been tried.

♦ **Product: Business of Your Brain – analyzes your brain's ability to focus**

What: Business of Your Brain by Xerox Corporation is a desktop application that analyzes your Microsoft Outlook interaction to create a snapshot of your brain's ability (or inability) to focus at work. Examining the emails you send and receive, the meetings you attend, the people you interact with and the words you commonly use, it points out potential distractions getting in the way of your focus – such as the use of nebulous clichés like "synergy", or the total time you spend in overly long, overly crowded meetings.

Benefits: Among other things, this tool analyzes your MS Outlook data to identify who you interact with and how; this can provide insights into the sources of your email overload and other behavior patterns, leading to possible changes and improvements.

Caveats: This application, in its maker's words, provides an activity snapshot that is "completely unscientific", and is designed with a

humorous interface to match. It is worth trying (and is free of cost), but is best taken with a grain of salt.

It is advisable to seek the opinion of the IT group as to the security and reliability implications of this tool before introducing it into an enterprise environment.

Implementation: The tool can be downloaded from Xerox, and requires installation on the client. It runs with MS Outlook 2003 or later, on Windows XP/Vista/7.

Vendor link: http://www.businessofyourbrain.com.

> The use of humor in driving messages related to IO is highly recommended, and is often seen in training materials in this domain. The objective is to change ingrained behaviors that are – let's face it – at least partly irrational, ridiculous and harmful, but you can't just tell people that to their face. Helping them laugh at their own behavior is a better approach.

♦ **Product: InboxMind – an organization-wide email productivity solution**

What: InboxMind by MessageMind is a comprehensive server-based enterprise product that straddles the line between individual and group productivity enhancement. It prioritizes and displays incoming messages based on their importance, as determined by algorithms that constantly learn from the user's behavior, past email history and company business rules. It provides workflow management features to improve email processing, and advanced analytics that show email behavior indicators and time trends for individuals and groups, providing insight to both group managers and individual users. For example, it can answer questions such as "in which department in the company are important messages delayed the longest before being replied to?"

Note the related *SharedInboxMind*, which extends this technology to the group level to improve productivity and service quality in shared mailboxes.

Benefits: This is perhaps the most powerful analytical tool currently available for tracking email behaviors and trends in an entire organization. In addition to helping individual users deal with their inbox, it can supply insightful inputs for defining an improvement program, and tracking indicators for monitoring and maintaining its success.

Caveats: This is a high power, complex tool that interfaces with the organization's email servers; its deployment should be done by the IT group in concert with the vendor.

Implementation: Works with MS Outlook and Exchange, BlackBerry OS and BlackBerry Enterprise Server, and other major mobile email platforms.

Vendor link: http://messagemind.com.

♦ **Product: ToutApp – a productive email platform for salespeople**

What: ToutApp is a multi-featured communication platform focused on helping salespeople manage their interactions and contacts more productively. Its features include templates for creating personalized recurring emails, tracking of sent email viewing by the recipients, email analytics, delayed sending, and more.

Caveats: See "General comments regarding Inbox Enhancement add-ins" in the appendix.

Implementation: ToutApp works with Gmail and MS Outlook.

Vendor link: http://www.toutapp.com.

♦ **Provide one on one coaching on email skills**

What: Provide to employees email skills coaching in a one on one setting at the user's computer. A handout of the key lessons (possibly in the form of a reference card) can be left with the user as a memory aid.

Benefits: Personal coaching at the user's own computer allows a knowledgeable trainer to customize the lessons taught to each user's specific issues and lack of expertise, achieving optimal results.

Caveats: Obviously, one on one training is expensive.

Implementation: To do this right, a "trainer guide" needs to be developed and trainers need to be trainer to apply its content to the one on one format, which implies on-the-fly adjustment to the user's individual knowledge gaps and needs. It is useful to use the opportunity to have the trainer interview the user briefly, filling in a survey that can provide insight into the causes and manifestations of IO in the organization.

Variations: Once the concept and a cadre of trainers are up, it is possible to apply them to train users in additional areas of effective computer use (e.g. Office applications).

Existing cases: This method was used in the YourTime program deployed at Intel (q.v.), and was subsequently extended successfully to cover additional computer training areas.

♦ **Add a "self-destruct-by" field to email headers**

What: Create a standard that adds to email message headers a field ("x-expires") containing a date on which the message will delete itself from recipients' systems.

Benefits: This standard would reduce Inbox clutter by eliminating messages that are no longer relevant (as determined by their creator).

Caveats: To be effective, this assumes that senders will be responsible enough to bother to set the expiration date. This may or may not happen.

A different concept for message expiry is incorporated in Inbox Pro (q.v.).

Implementation: This would require lobbying for acceptance of such a new standard, and action by email software vendors to incorporate the required response (deleting the stale messages) in their products.

Existing cases: This idea has been introduced at a conference in February 2011 by Joshua Baer, CEO of OtherInbox. Mr. Baer stated that his company will be honoring this standard in its own product (q.v.).

Related links: For a (no longer active) discussion forum on this idea, see http://bit.ly/IOCR034.

♦ **Use templates to automate composing recurrent email types**

What: Use the capability of an email client to create messages from saved templates to avoid retyping the content of frequently used messages.

Benefits: Saves time, once the templates are in place.

Implementation: In MS Outlook, this is an included feature (although invoking a custom template is a bit circuitous).

Variations: Adding a button or drop-down list that would invoke the template without going through the nested menus in MS Outlook would make this feature much friendlier.

Existing cases: This concept is facilitated and expanded considerably in Standss InsertText for Outlook (q.v.). For Gmail users, a basic implementation is available as the built-in Google Labs feature "Canned Responses".

♦ **Product: InsertText for Outlook – inserts frequently used text into messages**

What: InsertText for Outlook by Standss inserts frequently repeated text fragments into an email at the click of a button; it can also generate entire messages from predefined templates, speeding up composing and replying to messages.

Benefits: Speeds up composing and replying to mail, especially in repetitive situations.

Caveats: Changing the behavior of a mail client, though technically fairly easy to implement, could – if something goes wrong – put at risk a key enterprise application. Deployment of this solution should be done with great care using professional standards of testing and quality assurance.

Implementation: InsertText can be used with MS Outlook 2000, 2002/XP, 2003, 2007 or 2010, running on Windows 95, 98, ME, 2000, XP, Vista or Windows 7.

Vendor link: http://www.standss.com/inserttext.

♦ **Re-examine job scopes to keep email in control**

What: Examine job descriptions, and the related responsibilities and approval requirements, to ensure that the email interaction the job demands is manageable.

If a given job is found to have a problem, it may be modified to have less scope or to receive more support from assistants. In some cases, changing approval processes to require fewer signatures or to delegate decision making to other people may cut down the load of email-borne approval requests.

Benefits: This idea derives from the observation that in some jobs (notably in senior and middle management) the number of tasks or decisions requested via email per day far exceeds the available time and mental bandwidth. A manager who receives 300 messages daily can eliminate all the fluff and still remain with 50 messages requiring serious thinking and decision making, and this is not feasible in a single day. This is a good warning flag that the job definition is incorrect.

Addressing this situation would attack a seldom admitted root cause of IO: many people just have too many job responsibilities.

Appendix

General comments regarding Inbox Enhancement add-ins

Caveat Emptor! This guide includes many software add-ins that modify the behavior of an email program to enhance the functionality and ease of inbox processing. Since the author has varying degrees of acquaintance with these tools, the reader must be responsible to assess the suitability of each tool to their needs. While these tools can usually be purchased online and applied immediately, one should remember that changing the behavior of a mail client could – if something goes wrong – put at risk a key enterprise application. It is therefore advisable to seek the opinion of one's IT group as to the security and reliability implications of a tool before introducing it into an enterprise environment.

Many inbox enhancement tools are targeted at the individual user; however, if the tool is to be deployed to an entire group, it is likely that the vendor will be pleased to negotiate a favorable quantity discount or site license, and may be willing to code modifications or customizations to meet the buying company's needs and constraints. A good approach for an IT group may be to verify absence of risks, allow a small number of early adopters to try the tool, and if this proves effective proceed to negotiate a larger installation with the vendor.

Notes on developing software solutions in-house

Some of the solutions described in this guide are add-ins to the mail client or server. Of these, some are commercial products, but others are suitable to custom development, which a large organization can either handle in its internal IT group or outsource to a software vendor. Indeed, a number of ideas are included in this document in order to encourage the reader to consider developing them and thereby advancing the state of the art.

While developing such tools is well within the capability of a serious IT group, it must be kept in mind that changing the behavior of a mail client or server could – if something goes wrong – put at risk a key enterprise application. Compatibility of the solution with the rest of the IT build, and with other email add-ins, must be assured. Development of such a solution should therefore be done with great care using professional standards of testing and quality assurance.

Should your organization develop such a solution internally, the author encourages you to share what you've done and the results you've observed with the rest of the community. You can contact the author to consider how to do this sharing in a manner suited to your organization's expectations and constraints.