No More Reply-to-All

Anne-Françoise Rutkowski, University of Tilburg

Michiel van Genuchten, Eindhoven University of Technology

Companies and individuals can easily calculate their e-mail pollution index, with a low index indicating good behavior in the virtual world.

E-mail is a key tool for communicating in virtual teams, but it has become both a blessing and a curse. It supports swift communication across time zones, but at the same time, e-mail overload imposes a burden that will only get worse: By 2011, forecasters expect business-related e-mail volume to grow from the current 18 Mbytes per day to 28 Mbytes per day for a typical corporate e-mail account (www.guardian.co.uk/technology/2007/dec/06/digitalcommunication/print).

Often, e-mail now has a social function and can no longer be counted on to be only informative. Useful messages might end up lost in the unread folder, victims of time pressure or a bad decision process. Undoubtedly, e-mail provides a freeway for communication, but too much traffic creates jams that keep everyone from getting through. This is especially harmful in a virtual organization that uses e-mail as a means of communication to compensate for the lack of informal face-to-face meetings that are routine in more traditional organizations. Coping with e-mail overload requires a logical and social decision screening scheme for which the rules are bounded by the limit of our memory capacity as well as by professional, cultural, and personal cognitive schema.

We conducted a survey evaluating the experiences of working in a 200-person software unit within a multinational corporation of 150,000 people. The 200 people work in a dozen locations in nine countries on three continents. From East to West, they cover 16 times zones. The subunits' size varies from three to 70 people. The survey's results suggest that e-mail overload is less an engineering problem and more a management and sales problem. Managers reported spending about twice as many hours on e-mail as engineers, as Figure 1 shows. They send more than twice the number of messages per day than engineers. Despite the considerable amount of time they spend going through their e-mail, managers report being deluged with thousands of unread messages.

Yet the spectrum here is broad. At one extreme, a manager reported having 3,000 unread messages. At the other, an engineer admitted to sending not a single message in six months (we are still looking for this respondent).

Many practitioners, researchers, and developers have complained over the years that the amount of e-mail they receive exceeds the limits of what they can handle effectively. At the same time, e-mail has remained the preferred medium of asynchronous communication in many organizations. Little data is available about the actual number of messages sent and received, as well as the number of e-mail recipients. Significantly, e-mail tools—such as MS Outlook, Lotus Notes, and Gmail—provide little to no support for obtaining these basic e-mail metrics.

MEASURING E-MAIL POLLUTION

As more people flock to the Internet, external pollution—spam—has received considerable attention and become the target of spam filter countermeasures. We, however, focus on *internal* pollution. Our experience shows that it takes more time to detect internal pollution than external pollution. Deleting outrageous and misleading offers from parts unknown takes only a few seconds. Reading colleagues' e-mail messages only to find at its end that you were copied only for their convenience can take minutes. The term *e-mail pollution* addresses such superfluous e-mail. Adding too many recipients typically causes this pollution, whether they appear on the send-to or cc list. Three metrics define this pattern:

- percentage of messages with more recipients on the cc than the send-to list;
- average number of recipients in a message comprising sent-to, cc, and bcc recipients; and
- pollution index, derived from the average number of recipients on outgoing messages and the average number of recipients on incoming messages.
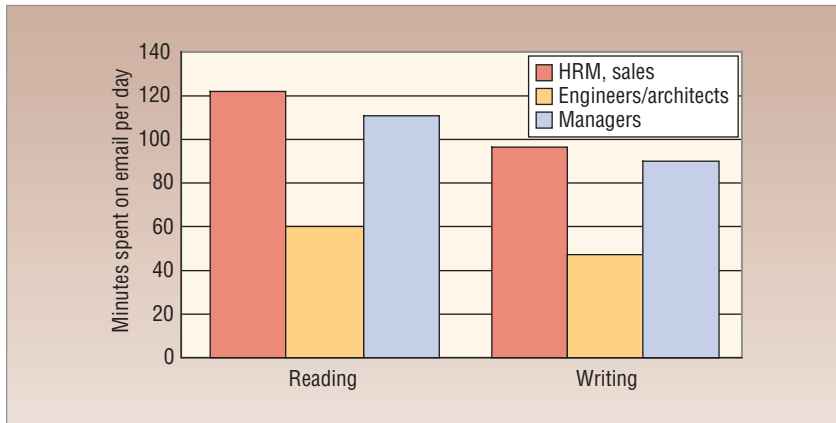
Figure 1. Time spent on e-mail. Managers reported spending about twice as many hours on e-mail as engineers do.

A pollution index of more than 1 designates someone as a *polluter*. An index lower than one denotes a *cleaner*.

LIMITING INTERNAL E-MAIL POLLUTION

In general, it is good to fight pollution at the source. In the case of e-mail, limit the number of messages sent and to focus on those that can be prevented. Clearly, there are messages from outside the company that should be encouraged—for example, mail from customers or other external stakeholders.

People within organizations must create and adhere to norms and associated rules that limit the number of unnecessary messages. Based on our experience in many virtual teams, we propose three such rules.

Rule 1: No more reply to all

"Reply to all" is the largest source of internal e-mail pollution. It progresses like an avalanche that gets worse if nobody consciously attempts to limit it. Typically, it starts with an e-mail addressed to two people, with two more on the cc list. The recipient concludes that the original four are apparently interested and that two or so more will be as well, then adds them accordingly. The avalanche continues.

A simple technical measure can enforce this rule: disabling the reply-to-all button. Rule 1 respects the organization's social structure. It still allows copying everyone already listed on the incoming e-mail, but the sender must do the thinking and copying.

Rule 2: No more copies than originals

Adding many cc's to one message typically arises because of the sender's laziness. That person might simply reply-to-all or could just add anybody who might be interested. This thinking transfers from the message's sender to the receiver.

Another harmful message that spawns many copies, the "I am worried" message, usually indicates a hidden conflict. Typically, such a message addresses the people responsible for a project and copies several senior managers. The sender essentially constructs a safeguard from the hierarchy—an insurance policy that preemptively includes an embedded "I told you so."

Fortunately, e-mail systems can check and automatically enforce Rule 2. If the copied recipients exceed the preset send-to threshold, the system will block the e-mail.

Rule 3: No more e-mail fights

Simply put, asynchronous technology should not be used in difficult situations. Use the good old phone instead.

Senior managers should call and intervene to stop useless e-mail fights within their organizations. Typically, people appreciate such interventions and use the opportunity to share their ideas or worries over the phone. One such call will make senders think twice the next time they consider picking a fight by e-mail.

PILOT FINDINGS

We put our rules to the test with a group of eight people drawn from the 200-person organization in which we conducted the survey. The eight people selected included the group's manager, six members of the product marketing team, and a management assistant. The team's members were distributed across four countries in Europe and Asia.

For the pretest, we collected e-mails over several weeks. The eight people were then asked to be aware and conscientiously decide on the number of people to be added to messages as recipients, both on the sent-to and copy lists. We also urged following Rules 1 and 2, suggesting these measures once to the employees in an e-mail. We also informed participants that the metrics would not be used at an individual level but only in the aggregate. We provided no additional tool support.

Our study analyzed two weeks of e-mail traffic, which encompassed thousands of messages sent or received by the eight-person group. Of the messages received in the eight-person team, 45 percent originated from within the 200-person organization. Another 21 percent originated from within the rest of the 150,000-person multinational company that contained the software unit. That left 34 percent of messages coming from the outside world. Table 1 shows the metrics for the period before and after the improvement actions were taken.

The one call to the group resulted in limiting e-mail pollution by 27 percent by limiting the number of recipients on outgoing emails. This had only a limited positive impact

on the individual, however, because many of the messages came from outside the eight-person team that applied the rules. However, given that 45 percent of the messages come from within the 200-person organization, the individual will begin benefiting once the same rules extend to that larger group.

E ducation and tool support across an organization and over time will be required to sustain the results shown here. Tool support alone will not solve the problem. Tools without change in behavior might make things worse. However, tool support is helpful for collecting the metrics, calculating the index, and enforcing the rules. Tool support can be implemented easily. One tool supplier, Orla (www.orla.org), did implement the tools support to enforce the rules within weeks after reading an early version of this column.

Table 1. Impact of pollution awareness.

Statistics	Pre	Post
Percentage of messages in which the number of copied recipients exceeded the number of sent-to recipients	39.00	29.00
Average recipients' incoming mail	4.31	4.35
Average recipients' sent-to mail	2.54	1.86
Group's pollution index	0.59	0.43

The e-mail pollution index can be calculated easily, with a low index indicating good behavior in the virtual world. The data presented shows that significant improvements can be achieved with simple measures. Better still, the same individuals who suffer from e-mail overload can start implementing the rules today. ◼

Anne-Françoise Rutkowski is an associate professor at the University of Tilburg, The Netherlands. Contact her at a.rutkowski@uvt.nl.

Michiel van Genuchten is a professor at Eindhoven University of Technology and manager of emerging software business at NXP Software, The Netherlands. Contact him at Genuchten@ieee.org.