

A Simple Approach to Improving Email Communication

Going back to basics.

Email communication is becoming a burden for many employees and the way email is handled is far from efficient [4]. Employees are overwhelmed by the volume [3], lose important items [5], and feel pressured to respond quickly (often within seconds [2]). The major research in this field is trying to solve these problems by designing and building better email systems through understanding email usage [4].

Although these systems will probably improve email communication, would going back to basics provide, at worst, an interim solution?

It would be a fair assumption that the end users of an email application are the major source of the problem, as they create and receive the email that periodically causes the problems. The back-to-basics approach is based on identifying the major problems users face with email and then administering training on how to become a more effective email communi-

cator. Although the approach sounds simple and has successfully been applied to many other problem areas, will it work for email communication?

STAGE 1: IDENTIFYING THE PROBLEMS

The first stage of the study involved developing and distributing a questionnaire to all staff who use email to capture employees' views on how email was used within their organization (a large U.K. Plc with 2,850 email users). To give the employees added security that their individual responses would not be disclosed to the management at the organization, the questionnaire was securely hosted on a remote server.

The questionnaire was designed to highlight any inefficiencies or defects in the way email is used. It asked employees to specify how many email messages they received on average each day and what proportions of these were irrelevant or unneces-

sary. Employees also answered questions that related to how they viewed email use within the organization.

STAGE 2: CREATE SPECIFIC TRAINING

The second stage of the study involved analyzing the data captured from the questionnaire (875 responses) and creating an email defects training program specific to the large U.K. Plc. The main findings from the questionnaire are:

- 16% of email messages received were copied unnecessarily;
- 13% of email messages received were irrelevant or untargeted;
- 41% of email messages received were for information purposes;
- 46% of actionable email messages received stated what action is expected;
- 56% of employees agreed email is used too often instead of phone or face-to-face communication; and
- 45% of employees say their email messages are easy to read.

Technical Opinion

The potential savings on reading email per employee per year.

To assess the extent, if any, the training program would have on the organization, a sender-recipient study was undertaken. Both sender and recipient groups (11 employees and 20 employees respectively) received different training on the best practice of email use. The sender training was more comprehensive than the recipient as the recipient only required a basic knowledge of the email defects to complete an evaluation sheet per email message received. The sender training explained the negative effects of email defects and the sessions were interactive with the participants having to highlight the defects of poorly written email messages. The training sessions targeted the following areas for optimization:

- Is an email message necessary?
- Targeting your email;
- Use an effective subject line;
- Getting your message across;
- Sending attachments; and
- Managing your Inbox.

All recipients were asked to mark up to 20 email messages they received from the sender before and after the sender had

No. of email messages received per day	Employees received training	Remove cc'd / unnecessary email	Application check for new mail (mins.)	Cost (£) per employee	Saving (£) per employee	Saving (%) per employee
23	No	No	5	2,442		
23	No	No	45	2,598	842	24%
23	No	Yes	5	2,442	998	29%
23	No	Yes	45	1,845	1,595	46%
23	Yes	No	5	3,181	259	8%
23	Yes	No	45	2,339	1,101	32%
23	Yes	Yes	5	2,259	1,181	34%
23	Yes	Yes	45	1,661	1,779	52%

received training on the best practice of email use. The recipients marked each message against a set of criteria, giving a score depending on how well the message met each criterion. The scores both before and after the training were averaged for each sender and recipient pair. The chosen pairs for the experiment were based on high-volume email senders with a recipient that was likely to receive a high number of the sender's email messages during the two-week monitoring process (two weeks before and after training).

DOES GOING BACK TO BASICS WORK?

T-test analysis showed that there was an improvement in the quality of email messages received by the recipients as a result of email training for the senders. Email training also had a significant impact on the following areas:

- 99% significantly better use of the subject line, which makes it easier to prioritize an email message and also to assess the content.
- 95% significantly better written email messages that were easier to read and to the point.
- On average it takes less time (10 seconds) to read and understand an email message as a result of the training.

IS THERE A FINANCIAL BENEFIT?

To determine any financial savings due to the training, the cost of reading email must be determined. Building on previous work by Jackson into the cost of reading business and non-business email, a cost of reading email formula was constructed [1]. Using the data obtained from the questionnaire, on average, employees received 23 email

T-test analysis showed that there was an improvement in the quality of email messages received by the recipients as a result of email training for the senders.

messages per day and it takes approximately 76 seconds to read each message. Employees therefore spend on average 29 minutes per day reading email. In addition, there is also an interrupt recovery time associated with email, which is reported to be 64 seconds per message [2]. Assuming an average salary of £16,640 per annum and an assumed overhead of a further £16,640 per year, the total cost per day of reading email for an organization can be calculated using the equation here (assuming each email message is read and has an interrupt recovery time):

$$\text{Cost of reading email} = (t_1 + t_2) * w * n$$

Where

- t_1 is the time taken to read all messages received (minutes).
- t_2 is the total interrupt recovery time (minutes).
- w is the average employee wage per minute.
- n is the number of employees within the organization.

The daily cost of reading email for this U.K. Plc with 2,850 email users is £40,848 and the cost per year over £9.8 million (based on 48 weeks a year).

The results from the sender and recipient study, after training, show that the U.K. Plc (2,850 email users) could save £3,071 per day and almost £737,000 per year on time spent reading email as a result of the training. This is the

minimum saving of 8% on the total cost of reading email and equates to £259 per employee per annum.

TARGETING FURTHER EMAIL SAVINGS

As already mentioned, on average 29% of the email an employee receives is of no value to them. Assuming that all these email messages are read and the employees have not received email training, an organization could further reduce the time employees spend reading email. For this U.K. Plc it would equate to almost £12,000 per day and over £2.8 million per year.

With the majority of email applications set to check for new email every five minutes, employees can become more efficient if they change the duration of when their email application checks for new email [2] resulting in a further saving. Time saved per email user as a result of increasing the duration of checking for new email from 5 to 45 minutes is 13.16 minutes per day. This could save this U.K. Plc £10,000 per day. The savings that can be made through the introduction of training, reducing no-value email and interrupt recovery time are detailed in the table.

CONCLUSION

Our research has shown that going back to basics has increased email efficiency and at minimum saved this U.K. Plc 8% financially on the total cost

of reading email. Although the results are specific to this large firm, the study indicates how an organization can become more effective, by reducing the cost associated with email use through simple email training. The implication for managers in other organizations is that if their own employees respond to training in the same way, they would also benefit from an increase in employee productivity.

REFERENCES

1. Jackson, T.W. and Dawson, R.J. The cost of email within organizations. In *Proceedings of the Information Resources Management Association International Conference: Challenges of Information Technology Management in the 21st Century*, M. Khosrowpour, Ed., (Anchorage, Alaska, May 2000), 1093–1094.
2. Jackson, T.W., Dawson, R., and Wilson, D. Understanding email interaction increases organizational productivity. *Commun. ACM* 46, 8 (Aug. 2003), 80–84.
3. Levitt, M. *Email Usage Forecast and Analysis, 2000–2005*. IDC Report W23011, Sept. 2000.
4. Rohall, S.L., et al. ReMail: A reinvented email prototype. *Extended Abstracts of the 2004 Conference on Human Factors and Computing Systems* (Apr. 2004, Vienna, Austria).
5. Whittaker, S. and Sidner, C. Email overload: Exploring personal information management of email. In *Proceedings of CHI '96*, (Apr. 1996, Vancouver, B.C.), 276–283.

THOMAS JACKSON (t.w.jackson@lboro.ac.uk) is a senior lecturer in the Research School of Informatics at Loughborough University, Leicestershire, U.K.

ANTHONY BURGESS (a.k.burgess@lboro.ac.uk) is a research student at Loughborough University, Leicestershire, U.K.

JANET EDWARDS (j.edwards@lboro.ac.uk) is a lecturer in Computer Science at Loughborough University, Leicestershire, U.K.

Copyright of Communications of the ACM is the property of Association for Computing Machinery and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.