Emerging Patterns of E-mail use by Managers

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Abstract

The study analyses patterns of e-mail use by managers in Australia and Hong Kong, and models e-mail use as a function of manager characteristics, organisational size and length of use of e-mail. The results suggest that while the primary use of e-mail is currently for inter-organisational communication, e-mail is consuming large amounts of managerial time, particularly for more senior managers. In contrast to older studies of management activity, the results suggest a large amount of managerial time is being spent in solitary activity, possibly at the expense of face-to-face communications. A significant proportion of e-mail received did not appear to contribute to productivity, with both personal e-mails and marketing e-mails constituting a large percentage of received e-mails. The study suggests that e-mail use will grow as individual and organisational experience increases. We suggest that managers need to consider the time demands caused by the growing use of e-mail.

Keywords: e-mail, managerial work patterns, policy, work time.

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Emerging Patterns of E-mail Use by Managers

Introduction

Since the mid 1990s, the Internet and the world wide web have had a dramatic impact on the amount of, and speed of, communications, both inside and outside organizations. The Internet facilitates information exchange within the organization, and allows the sending of mass or personalized messages to current or potential customers outside the organization.

The most common use of the internet in communications is for transmission of electronic messages or e-mail, particularly in the workplace, with 55-84% of workers in different countries reported to be using the Internet every day or several times a week (Merrick, 2000). E-mail has created one of the largest changes in the workplace in the past ten years, with its ability to transmit messages to distant parts of the organization, or to nearby offices, without the need for face to face contact. Indeed, there are anecdotal suggestions that e-mail is replacing informal office communication (Merrick, 2000), which Kotter’s landmark study (1982) showed consumed large amounts of senior management time. E-mail is a solitary activity, and Kotter found that the average general manager spent only 25% of their working time alone.

If e-mail is indeed consuming large amounts of time in the workplace, and in particular consuming a significant proportion of solitary time, it may distract managers from other tasks identified by Kotter, such as agenda setting and updating, or from the important role of face to face communications. However, there is little empirical evidence to establish the extent that e-mail is being used by managers, the amount of time consumed using e-mail, or the nature of e-mail communications in the workplace.

In this study, we investigate the extent to which e-mail is being used by managers and the implications for organizations.

Advantages of e-mail

E-mail allows message and file transmission to anyone connected to the internet anywhere in the world. The message can be sent to small or large groups simultaneously, at negligible marginal cost and time for each extra message transmission. In contrast to the text and graphics limitations of paper-based communications, e-mail files can also transmit sound and video, thus increasing the attractiveness of the message. The e-mail system is not time dependent, so business divisions in all parts of the world can send and receive messages independent of time differences and distance. Thus, in an environment of increasing globalization of business, e-mails provide an inexpensive and rapid method of communication across borders and time zones.

E-mail also provides many simple mechanisms for increasing the efficiency of business operations. Automated reply features encourage quicker responses than traditional mail. Communication with others does not rely on direct contact, thus eliminating ‘phone tag’ situations where two parties find themselves responding to returned phone messages. The electronic in-box on the desktop containing dated e-mail provides a powerful reminder of
messages that need a reply. Automatic sorting on importance and urgency criteria potentially overcomes the problem inherent in paper based communications where urgent messages can get lost in a pile of paper. The ability to electronically store large numbers of e-mails also simplifies the recording and archival of sent and received messages.

In addition to its use for intra-organizational and inter-organizational communication, e-mail is increasingly being used as an alternative to traditional methods of marketing promotion. E-mail allows highly targeted communications to both current and potential customers. Automated, yet personalized, e-mail messages can be sent to the entire customer base or to a targeted segment at a fraction of the cost of traditional promotional strategies. Active customers can be alerted to new product offerings or spot specials; inactive customers can be reactivated with the offer of discounts or one-off promotions, with e-mails carrying links to web pages for further information. The almost instantaneous nature of e-mail means that the success of a direct e-mail message can be assessed in days, rather than the weeks required by traditional direct mail marketing (Schwartz, 2000).

**Disadvantages of e-mail**

While e-mail communication has obvious benefits for businesses, the disadvantages of the medium are also becoming apparent. The ease of message composition and transmission to multiple recipients at the push of a button can result in excessive numbers of e-mails for organizations and individuals. Messages (and attachments) can be circulated to a variety of people with only peripheral interest in, or relevance to, the issue being communicated, purely because it is easy to do. It has been estimated that managers can spend two to three hours each day reading, sending, and responding to e-mails (Hymowitz, 2000; Internet Business News, 2000). Even if an individual does not receive large numbers of e-mails, the ease of attaching documents can mean that individuals without the need, time or interest to be informed on a particular matter are swamped with unnecessary background documents.

The ease of use and the impersonal nature of e-mails can also reduce the attention given to the potential consequences of a message, and thus increase the likelihood of misinterpretation. E-mails are often composed in a casual manner, especially when making quick responses to received e-mail, with abbreviations and shorthand used to alleviate the inherent slowness of typing (Sipior and Ward, 1999). Lack of attention to message construction can detract from the clarity and meaning of the communication. Since the recipient is separated from the sender geographically and possibly temporally, dynamic feedback is not available. Thus the sender does not have the opportunity to evaluate how well the message is understood and provide clarification or further information. This lack of body language and context means that messages can easily be misinterpreted (Sproull and Kiesler, 1986; Sipior and Ward 1999). Furthermore, offending e-mail can be stored, presenting the opportunity for re-reading, reinterpretation and quotation out of context, thus increasing the likelihood of emotional reactions.

Compounding the problem of lack of care in composing e-mails is the mistaken view that e-mail is ephemeral in nature. E-mail disappears from the sender’s screen after being sent, and recipients can easily delete e-mail even before reading the message. Thus the perception of the fleeting nature of e-mail messages can result in a greater sense of freedom in expression and self-disclosure than in paper based communications (Sipior and Ward 1999). Because of
this potential for careless wording and misinterpretation, e-mails can result in an emotionally worded reply that may spiral into an ongoing e-mail battle involving a great number of people. Such ‘flame mail’ situations can present substantial threats to team and co-worker collaboration in the future (Mills, Clay, & Mortensen, 2000), and can expose the organization to legal liability (O’Blenes, 2000).

In addition to problems arising for corporate communications, the increasing use of e-mail also presents challenges for its use in marketing. As the use of direct e-mail grows, it is possible that the messages may become less effective, and worse, that marketing e-mails might damage a company brand if a message is viewed as junk mail. There is already evidence that click through rates on direct e-mails are falling (Kennedy, 2001; Schwarz, 2000) and if individuals are receiving large numbers of marketing e-mails, then the medium is likely to become less efficient. Furthermore, if individuals judge that a large percentage of the e-mails that they receive are of little interest, e-mail may also become less effective for internal communication purposes.

Inappropriate use of e-mail

There has been also growing concern over inappropriate use of organizational e-mail resources in recent years (Belanoff, Spelfogel, and Bogue, 1999; Leibowitz, 1999). Personal and commercial e-mail accounts can operate using common software and the same server, and work e-mails can be sent from home, thus blurring the distinction between personal and work related communication. For example, the increasing use of e-mail for social purposes presents challenges for organizations in that it provides employees with the opportunity to use company resources for personal ends, ranging from shopping on-line to running a business using company time and resources (McCarthy, 1999). Personal e-mails received at work consume staff time, server resources, and present a risk of virus transmission from external sources. The possibility that staff are using e-mail extensively for non-work related issues presents management with a difficult decision whether to ignore personal e-mail use, or to alienate staff by trying to monitor and control individual use of e-mail (Hays, 1999; Adams, Scheuing, and Feeley, 2000).

It is also easy for employees to overlook the fact that e-mail communications sent using a corporate address or server can be viewed as an official communication of the organization. Unlike traditional forms of written communication, e-mails do not carry the organization’s letterhead, which reminds writers of the official status of their communications. Thus organizations might be rendered liable for inappropriate e-mail communications sent by employees. Consequently, organizations are being encouraged to develop policies to deal with e-mail content that is pornographic in nature, or contributes to sexual harassment or vilification (Carrns, 2000; Wright, 2000). While such policies may limit the organisation’s legal risk, they do nothing to counter the extensive amount of staff time spent on reading and responding to e-mails.

E-mail thus represents a double-edged sword for organizations. On one hand, it offers the ability to foster communication within and outside the organization at relatively low cost, across borders and time. On the other hand, e-mail can present a potentially enormous drain on the time of staff, contribute to staff conflict, reduce staff productivity and expose the organization to litigation. However, the continuing growth in e-mail usage suggests that
e-mail’s contribution to the efficiency and effectiveness of organizational communication is thought to outweigh its disadvantages. Given the potential problems with e-mail, its use requires vigilance on the part of organizational leaders to maximize its benefits and to minimize and control problems. Research on the pattern of use of e-mail in organizations can help managers to identify potential problems, insights and skills by users and develop appropriate policy guidelines.

**Managerial e-mail usage and policy in organizations**

Investigating e-mail use by managers is particularly relevant to advance the understanding of organizational efforts to maximize benefits and to minimize problems with e-mail. Not only are managers significant users of the internet and e-mail in their daily work (Verespej, 2000), but they are influential in policy formation. If managers perceive problems with their experiences, then they are more likely to initiate corrective action such as policy guidelines and training. Thus their experiences are likely to impact on the development of e-mail policy and skill development within organizations. Most importantly, senior management time is a scarce and expensive resource for organizations, and it is important for organizations to understand the impact of e-mail on managerial time allocation, and optimize the way in which managers use e-mail. Despite the importance of managers as a group of users of e-mail, there are no systematic studies of their usage patterns. Most reports on e-mail use provide anecdotal data and/or reflect behavior of all employees. This study seeks to provide insight into specific patterns of e-mail use by managers, examining e-mail use as a function of managerial and organizational characteristics.

Age, gender, seniority and length of use of e-mail are managerial characteristics examined in this study. Early studies of e-mail use in the general community have shown that younger people and males tend to be higher users of the Internet and e-mail (ABS 1998). More recent reports, however, show little difference in the frequency of Internet use by men and women, but continue to show higher rates of Internet use by younger people, and by those who earn more (ABS 2001). However, there has to date been no evidence to establish whether this pattern is replicated in workplace use of e-mail. The seniority of the manager may also influence e-mail use due to subordinates’ perceived need to keep their managers informed, and also to senior managers’ central role in organizational communication channels. Finally, a manager’s length of experience using e-mail is likely to influence use since familiarity with computers, e-mail software and its benefits are likely to encourage continued use. Thus, age, gender, seniority and length of use are likely to positively influence managers’ use of e-mail.

In addition to managerial characteristics we examined a number of organizational characteristics—organizational size and length of experience of e-mail use hypothesized to be associated with e-mail use. Large organizations are likely to be geographically dispersed, thus increasing the likelihood of use of electronic forms of communication. Even if organizations are located in one area, large staff numbers are likely to make e-mail an attractive form of communication. Organizational length of use is likely to encourage a culture of e-mail communication, as well as increase individual manager’s experience and familiarity, suggesting a positive relationship between organizational size and experience with e-mail and managerial use of e-mail.
In addition, the study assesses the association between e-mail use and the existence of an e-mail policy, since it is expected that e-mail policy will reflect managerial experience. For example, e-mail policy is more likely to exist in organizations where managers send and receive large numbers of e-mail. E-mail use and policy formation are also likely to be impacted by factors such as the size of the organization and length of experience with e-mails. Large organizations, by virtue of their staff numbers and geographical spread, will find e-mail an attractive communication tool, but also a source of increased work in sending and replying to large numbers of e-mails. They are also likely to be more familiar with problems of inappropriate content and personal use by staff. Thus it is expected that larger organizations and organizations with longer experience of using e-mail are more likely to have e-mail policies.

Cultural values and e-mail usage

E-mail has obvious advantages for global organizations and organizations with international markets, since one of the primary benefits associated with e-mail is its utility for communication across different countries and time zones. Despite this, comparative studies of e-mail use are absent from the literature, even though cultural differences may influence the nature of problems experienced and the strategies employed to addressed perceived problems. For example, western organizations emphasize individualistic values and tend to rely on formal control mechanisms, whereas eastern organizations reflect collectivist values (Hofstede, 1980) influencing behavior by adherence to group norms (Chow, 1998). However, it is not clear whether organizational usage of e-mail in eastern societies is different from its usage in western countries with comparable levels of adoption. Specifically, do usage patterns and policies reflect the communication tool or its cultural foundation?

To examine these issues, we assess the usage of e-mail by Australian and Hong Kong managers. While it is difficult to directly compare Internet use in the two countries due to different reporting mechanisms, Internet penetration is high in both countries. In the twelve months to November 2000, 50% of all adults in Australia used the Internet (ABS, 2001); at the same time, 37% of all adults in Hong Kong were said to be users of the Internet (Wong, 2000). For managers, these figures would be much higher, though statistics on managerial use of e-mail do not appear to be available in either country. Thus, e-mail usage across the two countries is not likely to reflect differences in managerial access to technology and software. We examine the self-reported frequency of e-mail use by managers for both organizational and personal use. We explore for cultural differences in e-mail use and analyze the factors which are associated with large numbers of e-mails, which may help to determine the direction that organizations need to take to capture the benefits of e-mail, while minimizing the problems with its use.

Methodology

One hundred and sixty eight managers (88 in Australia and 80 in Hong Kong) completed a questionnaire concerning their use of e-mail at work for both business and private use. All were practicing managers engaged in part-time management study. Participation was anonymous and voluntary. Respondents were asked to record the number and type of e-mails received and sent over one 24 hour period, and to estimate the time spent on e-mail over that day. The survey also investigated organizational characteristics (such as size, length of use of
e-mail) and personal characteristics of the respondent (such as age, gender, seniority and length of use of e-mail), which were proposed to be associated with use of e-mail.

Self-reporting of e-mail type is likely to produce a bias towards under-reporting of personal use of e-mails. Respondents may be reluctant to report very high personal use of e-mail during work time. Similarly, e-mails with mixed social and business content are more likely to be reported as primarily business in content. Without obtaining a written record of an individual's e-mail output and independent coding of e-mails, it would be difficult to obtain a more objective measure of the extent of personal e-mail use, and this method would be unacceptable in most circumstances due to privacy constraints. It was therefore decided to accept self-reporting of e-mail type, with the understanding that there was likely to be a bias in favor of under-reporting personal use of e-mails. Data was cleaned to check for data entry errors, and analyzed using t-tests, ANOVA, univariate, multivariate and logistic regression and chi-square tests to reflect the different types of data and statistical tests required.

Results

There were 168 responses, representing a response rate of over 50%. Gender of the respondents was roughly equal; (51.4% male, 48.5% Female). Other respondent characteristics are shown in Table 1. There were no significant differences between the Australian and HK samples in terms of age, seniority, length of personal or organizational use of e-mail, or organizational size (p > 0.10). Australian respondents were more likely to be male (p = 0.001), reflecting a higher proportion of males in the sampling frame. Not surprisingly, people who send a lot of e-mail tend to receive a lot of e-mail (r = 0.727, p < 0.001).

Table 1: Respondent statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>34.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Levels from CEO</td>
<td>3.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Personal use of e-mail (yrs)</td>
<td>5.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Organization size (staff no)</td>
<td>957.1</td>
<td>643.5</td>
</tr>
<tr>
<td>Organizational use of e-mail (yrs)</td>
<td>5.9</td>
<td>3.3</td>
</tr>
</tbody>
</table>

E-mail usage patterns

Managers typically used more than one e-mail address, with the modal number of e-mail addresses being two (53% of respondents). The work address was nearly always the most commonly used address (86.3% of respondents). Respondents estimated the amount of time that they spent on e-mail during the 24 hour period under study, with details shown in Table 2. The modal category, estimated by 28.6% of respondents, was more than two hours spent on reading and/or answering e-mail. Clearly, e-mail is seen as consuming a significant portion of work time.
Table 2: Estimated time spent on e-mail per day

<table>
<thead>
<tr>
<th>Time</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 minutes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5-30 minutes</td>
<td>21.9</td>
<td>21.9</td>
</tr>
<tr>
<td>30 minutes – 1 hour</td>
<td>25.7</td>
<td>47.6</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>23.8</td>
<td>71.4</td>
</tr>
<tr>
<td>More than 2 hours</td>
<td>28.6</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3 shows the mean frequency and type of daily e-mails received at work by the sample. There were no significant differences between Australian and Hong Kong samples in the numbers of e-mails received or sent, in the percentage which were received only by the manager, rather than being copied to others (% unique received), in the frequency of social (% social received) or direct selling e-mails received (% selling), the percentage of e-mails that were received from within the organization (% inter-org received), replied to, or the percentage of e-mails which were seen to be of little interest to the recipient (% of little interest). The percentage of e-mails sent outside the organization and the percentage sent to only one person (% unique sent) were significantly different between the two countries ($p < 0.05$), however these results may be due to chance, due to the number of tests performed. At a Bonferroni adjusted level of significance ($p = 0.05/11 = 0.005$) the difference in e-mails sent outside the organization ($p = 0.009$) just failed to reach significance and there were no other significant differences between the countries on any of the variables in Table 3.

Table 3: Descriptive statistics

<table>
<thead>
<tr>
<th>Mean</th>
<th>Australia</th>
<th>Hong Kong</th>
<th>All (std dev)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. received total</td>
<td>29.0</td>
<td>24.6</td>
<td>26.9</td>
<td>22.40</td>
</tr>
<tr>
<td>% unique received</td>
<td>46.7</td>
<td>45.0</td>
<td>46.1</td>
<td>11.90</td>
</tr>
<tr>
<td>% social received</td>
<td>14.6</td>
<td>15.1</td>
<td>14.9</td>
<td>4.90</td>
</tr>
<tr>
<td>% selling</td>
<td>8.9</td>
<td>7.1</td>
<td>8.2</td>
<td>6.70</td>
</tr>
<tr>
<td>% inter-org received</td>
<td>61.8</td>
<td>64.4</td>
<td>63.2</td>
<td>18.00</td>
</tr>
<tr>
<td>% replied to</td>
<td>45.7</td>
<td>53.1</td>
<td>49.1</td>
<td>13.10</td>
</tr>
<tr>
<td>% of little interest</td>
<td>22.8</td>
<td>20.2</td>
<td>21.6</td>
<td>7.90</td>
</tr>
<tr>
<td>Sent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. sent total</td>
<td>14.2</td>
<td>12.3</td>
<td>13.3</td>
<td>13.30</td>
</tr>
<tr>
<td>% sent outside</td>
<td>38.4</td>
<td>28.4</td>
<td>33.8</td>
<td>4.80</td>
</tr>
<tr>
<td>% unique sent</td>
<td>49.0</td>
<td>38.1</td>
<td>44.4</td>
<td>6.20</td>
</tr>
<tr>
<td>% social sent</td>
<td>18.0</td>
<td>16.2</td>
<td>17.3</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Table 3 also provides details on the level of use of e-mail for primarily social reasons, and perceptions of the relevance of e-mails received. Reported social use of e-mails is 14.6% for messages received by Australian managers and 15.1% for Hong Kong managers, however the difference was not significant ($p = 0.505$). Reported frequency of use of e-mail for primarily
social reasons was significantly and negatively associated with seniority in the organization, with more senior managers reporting a lower proportion of social e-mails ($p = 0.006$).

**Formal e-mail policy**

The survey also asked about the existence of organizational e-mail policies. Australian organizations were more likely to have a formal e-mail policy (63.6%) than Hong Kong organizations (33.4%). This difference in the existence of policies concerning e-mail use was significant ($p = 0.002$). The difference was not explained by any difference in the size of organizations sampled, since the difference was significant, even after allowing for the size of the organizations sampled in each country ($p = 0.001$).

Organizational e-mail policies appear to be of two major types; those which were designed to protect the organization from legal risk (e.g. barring pornographic content or material that could be associated with harassing others) and policies which attempted to limit e-mail proliferation (e.g. suggesting limits on the number of copies or attachments). Very few policies mentioned personal use of e-mail, and where policies did discuss it, personal use of e-mail use was generally permitted as long as it did not distract from work and otherwise conformed with organizational policies regarding content suitability. Existence of an e-mail policy was significantly and positively associated with organization size, ($p < 0.001$) and also with longer organization experience with e-mails ($p = 0.014$). There was weak evidence that organizations where managers received larger numbers of e-mails were more likely to have e-mail policies ($p = 0.144$).

While the study did not test whether e-mail policies were effective in restricting transmission of unsuitable content, there was no evidence that having a policy limited proliferation of inappropriate e-mails. In fact, the data were in the opposite direction, with employees from organizations with an e-mail policy reporting higher proportions of e-mails which were of little or no interest to them (means 25.5%, 21.1%) though the difference was not significant ($p = 0.428$). Existence of a policy was not associated with any difference in the proportion of social e-mails ($p = 0.745$).

**Predicting the number of e-mails received**

The absence of statistically different patterns of usage between Australian and Hong Kong managers suggests that despite the cultural differences between the two countries, managerial e-mail usage is directly comparable. As a result, the sample was combined to model the factors that predict e-mail usage. Table 4 displays the results of univariate and multivariate analysis to predict the number of e-mails received.
Table 4a: Predicting number of e-mails received: univariate analyses

<table>
<thead>
<tr>
<th>IV</th>
<th>β</th>
<th>St.Dev</th>
<th>T</th>
<th>p</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of use (individual)</td>
<td>6.259</td>
<td>1.086</td>
<td>5.76</td>
<td>&lt;0.001</td>
<td>0.164</td>
</tr>
<tr>
<td>Length of use (organizational)</td>
<td>5.629</td>
<td>1.130</td>
<td>4.98</td>
<td>&lt;0.001</td>
<td>0.152</td>
</tr>
<tr>
<td>Organization size</td>
<td>1.515</td>
<td>0.866</td>
<td>1.75</td>
<td>0.082</td>
<td>0.012</td>
</tr>
<tr>
<td>Levels from CEO</td>
<td>-0.857</td>
<td>0.881</td>
<td>-0.97</td>
<td>0.332</td>
<td>0.00</td>
</tr>
<tr>
<td>Age</td>
<td>-0.461</td>
<td>1.466</td>
<td>-0.31</td>
<td>0.753</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 4b: Predicting number of e-mails received: multivariate analysis

<table>
<thead>
<tr>
<th>IV</th>
<th>β</th>
<th>St.Dev</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of use (individual)</td>
<td>4.789</td>
<td>1.401</td>
<td>3.42</td>
<td>0.001</td>
</tr>
<tr>
<td>Length of use (organizational)</td>
<td>3.146</td>
<td>1.347</td>
<td>2.34</td>
<td>0.021</td>
</tr>
<tr>
<td>Levels from CEO</td>
<td>-2.263</td>
<td>1.124</td>
<td>-2.01</td>
<td>0.046</td>
</tr>
<tr>
<td>Organization size</td>
<td>1.857</td>
<td>1.095</td>
<td>1.70</td>
<td>0.092</td>
</tr>
<tr>
<td>Age</td>
<td>-1.684</td>
<td>1.550</td>
<td>-1.09</td>
<td>0.279</td>
</tr>
</tbody>
</table>

R² = 0.255: Adjusted R² = 0.226

In the univariate analysis, length of use of e-mail, both by the individual (p < 0.001) and within the organization (p < 0.001), was associated with an increased number of e-mails. There was a trend for managers in larger organizations to receive larger number of e-mails than managers in smaller companies (p = 0.082). Seniority in the organization (p = 0.332) and the age of the manager (p = 0.753) were not significantly associated with the number of e-mails received in the univariate analyses.

While the univariate analysis is useful for explaining the association between individual variables and the use of e-mail, the multivariate analysis allows better prediction of e-mail use, showing the extent to which each factor is associated with e-mail use after allowing for the effect of other factors. The largest single factor in predicting the number of e-mails received in both univariate and multivariate analyses was the length of time that the individual had used e-mail. This was significant even after allowing for the effects due to organizational size, length of e-mail use, employee seniority and age (p = 0.001). Even after allowing for individual experience with e-mail, the length of time that an organization had used e-mail was also significantly and positively associated with the number of e-mails received (p = 0.021). After allowing for both individual experience and organization size, the number of e-mails was also negatively associated with the number of levels that the manager was from the CEO (p = 0.046). The results suggest that senior individuals in large organizations with longer experience of e-mail, and who had used e-mail for longer periods of time themselves, were most likely to received large numbers of e-mails. There was no significant association between the number of e-mails and the age or sex of the manager.
Discussion

The results support anecdotal reports that e-mail is consuming large amounts of managerial time. On average, Hong Kong and Australian managers received 26.9 e-mails a day at work, and sent about 13.3 e-mails. This compares to US reports that the average corporate user receives about 30 messages a day (Hymowitz, 2000). As would be expected, respondents who sent a lot of e-mail tended to receive a lot of e-mail ($p < 0.001$). Thus e-mail may generate an increasing spiral of use – sending more e-mail will typically generate more responses to which the sender replies, creating new demands for messages and replies. This view was supported by the results that showed that people who had used e-mail for longer were significantly more likely to receive larger numbers of e-mails ($p < 0.001$) and that a high percentage (53.3%) of received e-mails were copies of messages sent to other people.

The average manager in the survey estimated that they were spending one to two hours on e-mail each day. About two-thirds (63.2%) of the e-mails received originated from inside the managers’ organizations, indicating the dominant use of e-mail is for intra-organizational communications. However, 21.6% of e-mail was said to be of little interest to the recipient, suggesting that much of the time spent on e-mail may not be useful. It is particularly worrying that senior managers were significantly more likely to receive more e-mail messages than more junior colleagues. Thus, the increasing use of e-mail in organizations, much of it for messages that have little interest for recipients, suggests a large and growing problem with unwanted e-mail communication, with the greatest demands on managers at higher levels within organizations.

Personal use of e-mail

A potential problem for organizations is the extent to which e-mail can be used for non-business purposes. While the high percentage of e-mail which came from inside the organization suggests that e-mail received at work by managers is primarily a business communication, the data reveals that almost one is six e-mail messages (14.9%), was classified as primarily social. Moreover, as discussed above, there are reasons to suggest that any self-report of the percentage of personal use of e-mail will be an under-estimate, so this figure may be a conservative estimate of personal e-mail use. In the sample organizations, 55.9% had instituted specific policies concerning e-mail usage. Overwhelmingly, policies tended to discuss the type of material that was not permitted in e-mails, such as pornographic content, rather than attempting to limit social use of e-mail by employees. E-mail policies to date appear to have largely followed the pattern of telephone usage within the organization; at middle management level and above, personal use is generally permitted under the assumption that use does not detract from work performance. However if use of e-mail continues to rise, this practice may be questioned, because the nature of e-mail usage appears to have the potential to disrupt work more than telephone calls, because of the easy ability to send a social message to multiple people at the same time. Very few managers would ring multiple colleagues at work to pass on a joke, but most e-mail users have experienced friends or colleagues who frequently forward e-mail jokes to multiple contacts, simultaneously disrupting the work of many recipients. It is interesting to consider why this potential major drain on staff time is not addressed in most e-mail policies. While many organizations are vigilant to the need to monitor for pornographic content and have established filters for this content it is more difficult to assess social content of e-mails. Thus, in the absence of data,
organizations may not recognize the extent of e-mail use for primarily social purposes, and hence do not see it as a problem.

It is also possible that organizational leaders recognize that even for social e-mail there are intangible benefits that accrue for the organization, such as fostering communication, and/or replacing other methods of informal communication. This is supported by some reports that suggest that e-mail is increasingly fulfilling the traditional role of the water cooler in facilitating communication (Merrick, 2000). Nevertheless, organizations will increasingly need to consider the extent to which e-mail is being used for personal use, and the drain that this is creating on staff time and seek ways of controlling e-mail use without being seen as instituting draconian policies.

E-mail policies

Despite similar levels of actual e-mail use between the two countries, Australian organizations were significantly more likely to have instituted formal e-mail policies. This finding is consistent with previous studies that suggest that Eastern organizations rely less on formal structuring of employee behavior, through explicit rules and policies, than Western organizations (Pugh and Hickson, 1976, Redding, 1980; Whitley, 1991).

As expected, existence of an e-mail policy was positively correlated with larger numbers of staff ($p < 0.001$). There was also support for the proposition that organizations with longer experience with e-mail were more likely to have an e-mail policy ($p = 0.017$). It is possible that longer experience with e-mails and the greater number of e-mails which this generates reveals problems that management attempts to address with a policy. However, there was no evidence that existence of a policy was associated with lower use of e-mails, or with a lower percentage of irrelevant e-mails. In fact, the data showed a weak trend existed in the opposite direction.

Marketing e-mail messages

An average of 8.2% of e-mails received by managers in both countries were said to be ‘trying to sell’ products or services. While we did not collect data on whether these e-mails were solicited or unsolicited, it supports reports of the growing use of e-mail for direct marketing, although both Australia and Hong Kong are said to lag behind the US in this area (Kennedy, 2001). However, our data shows that the typical manager is already receiving several marketing e-mails each day, raising the possibility that such messages will lose their effectiveness, and be judged, like much e-mail, as of little interest to the reader, and possibly become perceived as junk or ‘spam’ mail.

Changing patterns of managerial work

Perhaps one of the most important implications that can be drawn from the data is that the underlying pattern of managerial work is undergoing a fundamental transformation. This transformation arises not only from the fact that contemporary managers spend a substantial amount of their time composing, reviewing, and responding to e-mails but also from the fact that these activities are typically carried out in one’s office, isolated from others. The average manager in our study spent more than one hour per day in dealing with e-mails, with nearly
30% of managers spending more than two hours per day. This represents a large amount of a manager’s day spent involved in a relatively isolated activity, which is in sharp contrast to the results of Kotter’s (1982) study of managerial work patterns, which showed that managers tended to spend most of their time engaged with others in face-to-face communications, a pattern often characterized by spontaneous interactions. Few general managers in Kotter’s study spent more than 30% of their work time on solitary activities, with some spending as little as 10% of their time alone. Thus, the growing use of e-mail may be fundamentally changing the nature of managerial work by discouraging personal interactions. The pattern of spontaneous corridor interactions observed by Kotter in the 1980s may be in the process of being replaced by the manager who sits alone in the office, responding to messages, skilled in computer based interactions but with limited interpersonal communication skills.

Managerial implications

How should organizations respond to this evidence of the large and growing problem of staff time consumed by e-mail? Some of the important implications include:

1) Organizational policies, while generally addressing problems associated with legal threats from inappropriate content, need to give greater attention to addressing the social use of e-mail and limiting irrelevant and time-wasting e-mails. Policies could address such issues as the appropriateness of e-mails, length of e-mails and attachments and provide protocols for distribution and reply.

2) While technical skills in using e-mail are easy to acquire, efficient and effective use of the medium is not automatically achieved. Training for clarity of e-mails, and in recognising the limitations of e-mail as a form of communication, may also help to reduce excessive and irrelevant e-mails.

3) Organizations could also address the problem of excessive e-mail by initiating alternative avenues for inter-organizational communication. This could be achieved by providing facilities on staff web sites for broadcast messages which are not work-related, such as sales, solicitations and jokes. Provision of an alternative avenue for electronic communication can decrease e-mail traffic and workplace interruptions, while preserving the advantages of social e-mails for social purposes.

4) Perhaps because the use of e-mail has evolved relatively recently, e-mail is largely seen as a personalized communication device, and so most senior managers open their own e-mails. However, given that e-mail consumes a large amount of a manager’s time, organizations may need to consider whether senior managers might be better to have an assistant screen their e-mail, just as an assistant would routinely screen their postal mail.

Future research

While the data reported here reflects the e-mail usage of a relatively small sample of managers in Australia and in Hong Kong, it nevertheless provides a useful benchmark of contemporary managers’ use of email in these two countries. These data provide a basis for investigating evolving patterns of managerial e-mail use. While we found no cultural differences in e-mail usage by Australian and Hong Kong managers differences may emerge as a by product of different approaches to policing e-mail in organizations. Another useful direction for further research into e-mail in organizations would be to explore the potential
transformative impact of e-mail on the managerial role and interpersonal communications within the organization.

**Conclusion**

In conclusion, the results provide evidence that e-mail, while providing clear benefits to organizations in improved communications, is also consuming large amounts of staff time, particularly senior management time, often on e-mails that are of little or no interest to the receiver, and/or of primarily social content. The problem is unlikely to go away; the results suggest that the frequency of e-mail use increases with both personal and organizational experience with e-mails. As both of these increase, managers may find that they are receiving more e-mail than they can respond to while continuing to perform their duties, and organizations will need to address the time demands created by e-mail. Future research can extend the insights generated by these data as well as assess the potential transformative effects of e-mail on the managerial role.
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