# RESEARCH NOTE
## SPAM: THE REPEAT OFFENDER

### THE BOTTOM LINE

**In a survey of more than 800 users, Nucleus finds spam continues to be a growing problem. Despite aggressive spam filtering, 66 percent of messages getting through the filters and into users' inboxes are categorized by those users as spam. With users spending more than 1 percent of their time tackling spam in their inboxes each day, American companies alone are losing more than $70 billion a year in lost worker productivity.**

In what may be the most comprehensive look at the spam problem to date, Nucleus Research and Knowledgestorm surveyed 849 users and found that the average user receives 21 spam messages to their inbox each day.

Nucleus has seen a sharp rise in spam since its previous study in 2004, owing to the increasing creativity of spammers and sophistication of spamming tools. The large numbers of computers that have been compromised and used to send out small bursts of spam is making spam filtering less and less effective.

Two out of three e-mail messages received today are spam, even though 60 percent of companies employ enterprisewide spam filters.

This is not to say that spam filters should be turned off or are not effective. A significant amount of spam is still being caught before reaching the inbox. Looking at the total e-mail traffic, Nucleus estimates that at least 90 percent of e-mail reaching corporate servers is spam.

The good news is that the average number of spam messages reaching the inbox fell slightly to 21 messages per day from the 29 messages per day we found in our May 2004 study. This is still higher than the 13 messages per day the average user was receiving in our July 2003 study.

The average user receives 21 spam messages per day, down from 29 in 2004.

In calculating the lost productivity in May 2004, we found the average user lost 3.1 percent of their time. The current productivity loss has dropped to 1.2 percent of the average user's time in this study because of two factors:

- The reduction in the number of messages from 29 to 21 per day

▪ The dramatic reduction in the amount of time the user takes in identifying spam message and deleting them, down from 30 seconds per message in May 2004 to 16 seconds per message today.

**Figure 1. Average number of spam messages received to the inbox**
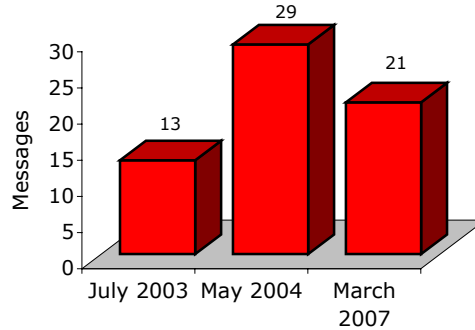


The average user spends 16 seconds per message reviewing and deleting spam — down from 30 seconds in 2004.

**Figure 2. Average lost productivity per employee**
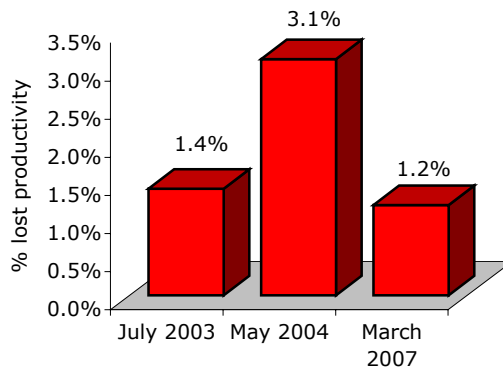


Calculation: Time spent deleting a spam e-mail at the average rate of spam e-mails/day

### THE COST OF SPAM

In our previous reports on spam, we calculated the cost of spam to corporations based on an average fully loaded cost of $30 per hour with a 2080-hour year.  This brings the annual cost of spam to $712 per user per year, down from $1,934 in 2004.

However, many companies have chosen to be more aggressive in flagging spam. This is a response to increasing complaints about spam from users, and result has been that a growing number of legitimate messages are blocked as spam or deleted.  Nucleus found most companies with spam filtering have implemented one of three strategies:

▪ A confirmation process which delays the message until the sender confirms that it is a legitimate message

- A quarantine strategy where spam messages are placed in a directory to be reviewed and confirmed by the recipients
- A delete strategy that deletes messages flagged as spam without user review.

**Figure 3. Average annual cost of spam per employee**
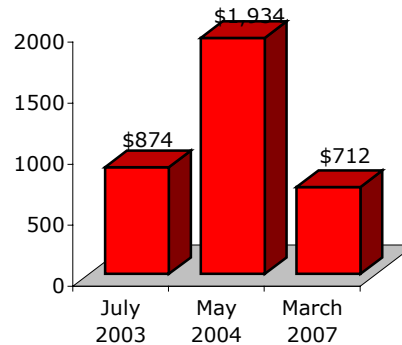


Calculation: Productivity loss as % of 2080 hours at a fully loaded cost of $30/hour

Unfortunately there is a cost in lost productivity for these strategies. Nucleus found that in companies that quarantine spam messages, users spent an average of 4.5 minutes per week reviewing these messages. Deleting messages turns out to be the most expensive strategy, with the average user in companies that delete spam messages losing an average of 7.3 minutes per week looking for lost legitimate messages.

The average annual cost of spam is $712 per user per year, not including time spent looking for lost messages or reviewing quarantined mail.

Companies that quarantine spam for user review should add $113 per user to that amount while companies that delete spam messages without user review should add an additional $183 per user.

Deleting spam without user review is the most costly policy for corporations, costing the average user 7.3 minutes per week or an additional $183 per user per year.

Spam has broader economic impact as well. While fraud and corruption has been rampant in Nigeria for some time, the country may be forever kept in the digital darkness because of the volume of 419 fraud spam. Most filters today block any mail with "Nigeria" in the title or text, effectively keeping anyone communicating with, from, to, or about Nigeria from doing it via e-mail.

The US workforce loses more than $71 billion a year in lost productivity to managing spam, based on Nucleus estimates (see appendix A).

## WHAT IS SPAM?
The most common types identified by survey respondents included adult-oriented solicitations (86 percent), financial lending solicitations (80 percent), and retail

offers (76 percent).  Interestingly, 17 percent of survey respondents considered unsolicited e-mails from family and friends as spam.

## PUNISHMENT FOR SPAMMERS?

According to our survey results, the level of frustration with spam continues to rise, to the point where 18 percent of respondents thought spammers should do jail time — and nearly one-third of those that voted for jail time thought it should be more than 36 months.

> More than one in two e-mail users believe convicted spammers should be fined at least $1 for each spam message distributed.

When provided the option of "other," respondents showed just how frustrating this issue has become: "other" responses included the death penalty, slow hanging, public flogging, psychological assessment, and other suggestions that are inappropriate to print.  Spammers, watch your backs.

> Nine out of 10 e-mail users are frustrated with spam, and one in 100 appear to be at the breaking point.

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### Appendix 1. Business e-mail users

| Employee profile | % of US workforce[1] | Estimated % with active work e-mail accounts | Number of active work e-mail users |
|---|---|---|---|
| Manager | 5% | 95% | 6,342,567 |
| Business/finance | 4% | 95% | 5,757,158 |
| Computers/math | 2% | 95% | 3,141,978 |
| Architecture/engineering | 2% | 95% | 2,535,171 |
| Life sciences | 1% | 95% | 1,261,722 |
| Community/social service | 1% | 75% | 1,422,197 |
| Legal | 1% | 95% | 1,049,979 |
| Education | 6% | 75% | 6,786,508 |
| Arts, design, media | 1% | 75% | 1,414,099 |
| Healthcare | 5% | 95% | 6,966,964 |
| Healthcare support | 3% | 75% | 2,825,829 |
| Protective services | 2% | 50% | 1,711,873 |
| Food preparation/service | 8% | 20% | 3,023,609 |
| Building/ground maintenance | 3% | 30% | 1,459,219 |
| Personal care | 2% | 50% | 1,785,906 |
| Sales/related | 11% | 95% | 14,823,101 |
| Office/administration | 17% | 95% | 24,244,557 |
| Farming/fishing | .3% | 30% | 148,884 |
| Construction | 5% | 50% | 3,567,723 |
| Installation/repair | 4% | 20% | 1,188,478 |
| Production | 7% | 30% | 3,444,026 |
| Transport | 7% | 50% | 5,373,605 |
| Total active work e-mail users | | | 100,249,046 |
| Annual cost of spam in lost productivity per user | | | $712 |
| Total annual cost of spam to US businesses | | | $71,347,652,734 |

1.   Based on most current data from U.S. Department of Labor Bureau of Labor Statistics, including the February 2007 US employment total of 145,919,000 employees.