Email Spam: A Single User's Perspective

VICTOR GRECH AND AGIUS MUSCAT HUGO
Paediatric Department, Mater Dei Hospital, Tal-Qroqq, Malta

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Email spam is a global nuisance and financial burden. This paper analyses the current breakdown of email in an active email account, subdividing spam by proportion and type.

INTRODUCTION

Email (noun or verb for electronic mail) is a store and forward method of composing, sending, storing, and receiving messages over electronic communication systems. Email is based on the Simple Mail Transfer Protocol (SMTP) and X.400 systems protocols. This communication method actually predates the Internet and started in 1965 as a way for multiple users on a time-sharing mainframe computer to communicate with each other. It was rapidly extended across networks allowing communication across different computers, and multiplied exponentially with the development of Advanced Research Projects Agency Network (ARPANET) of the US Department of Defense.[1]

Spamming may be defined as the misuse and manipulation of electronic messaging systems in order to haphazardly send unsolicited messages *en masse*.[2] The most widespread form of spam is via email, but the term also applies to such abuse in instant messaging, mobile text messages etc. Email spam commenced shortly after the Internet was opened to the public,[1] and since the first email spam in 1978,[3] it is conservatively estimated that at least 85% of worldwide email is comprised of spam.[4]

This study was undertaken in order to examine the current level and type of spam in relation to legitimate email, over the period January 2008.

METHODS

The author's Government email address (Mater Dei being a public hospital) was scrutinized daily and emails analysed by content. Data was entered into a spreadsheet for the purpose of analysis. Confidence limits were calculated using the method described by Fleiss.[5]

RESULTS

Over the period 1st-31st January, a total of 2010 emails were examined. 69.2% were spam while 30.8% were not (legitimate external emails and institutional emails)(*Table 1*).

Spam

Spam was constituted primarily of sexually or pharmaceutically targeted advertisements (*Table 1*).

Non spam

Ninety-three (93) emails were tagged as 'spam' by the Government's email filter when they were, in actual fact, legitimate emails. Almost all were cardiological in nature. These falsely spam-tagged emails constituted 4.6% of total emails, 6.7% of the total tagged as spam and 17.6% of all legitimate mail.

Internal

Internal institutional email, while including helpful items, did not allow the user to quickly identify which messages were useful and which were not (*Figure 1*).

Correspondence: *Dr. Victor Grech, Paediatric Department, Mater Dei Hospital, Tal-Qroqq, Malta. Tel: 2545 0000 Email: victor.e.grech@gov.mt*

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Subject	N	% overall	LCI	UCI	% of total spam	LCI	UCI
Legitimate mail	620	30.8	28.8	32.9			
External	545	27.1	25.2	29.1	-		
Institutional	75	3.7	3.0	4.7	-		
Spam	1390	69.2	67.1	71.2			
Penis enlargement	161	8.0	6.9	9.3	11.6	10.0	13.4
Sexual performance	72	3.6	2.8	4.5	5.2	4.1	6.5
Sex other	118	5.9	4.9	7.0	8.5	7.1	10.1
Drugs-impotence	88	4.4	3.5	5.4	6.3	5.1	7.8
Drugs-others	103	5.1	4.2	6.2	7.4	6.1	8.9
Gambling	17	0.8	0.5	1.4	1.2	0.7	2.0
Other spam	831	41.3	39.2	43.5	59.5	56.9	62.1
Total	2010						

Table 1. Email for the period 1st-31st January (inbox of author VG).

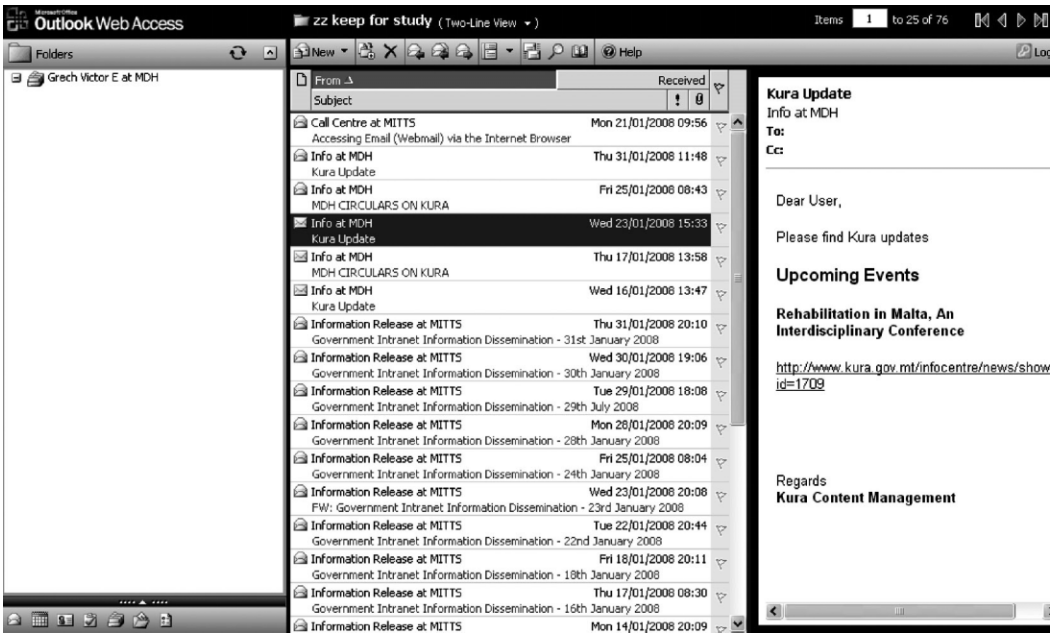

Figure 1.

DISCUSSION

Email constitutes a significant part of total individual communication, as evinced by the total of 2010 emails reviewed in one calendar month period, with well over half being spam. Spam is therefore a significant inconvenience of this method of interaction with just under a third of messages being unsolicited advertisements/promotions.

Spam is a highly economical and hence viable form of bulk advertising of wares or services as advertisers have no financial costs beyond those of malicious software development and email addresses database maintenance, processes that are highly automated. For these purposes, the collection of valid email addresses has become a new industry,[4] and indeed, millions of email addresses can be purchased cheaply (circa 1 million for 34 USD).

These costs, including lost productivity (individual and corporate), fraud, and hardware/software malfunction, are borne by the public and by Internet service providers, which have been forced to add extra storage and bandwidth capacity in order to cope with the email deluge. While spamming is widely loathed, anti-spam legislation is problematic as it is extremely difficult to catch spammers who often use malicious software (viruses or worms) to take over personal computers (so-called 'zombie networks') in order to

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automatically generate spam. It is therefore obvious that spamming is very profitable even with extremely low comeback rates.[6]

Indeed, in 2003, it was estimated that a third of email users had clicked on a web link in a spam message, and that 7% had ordered a product.[7]

Another global problem is that spam mailing lists are often riven with incorrect and/or out of date addresses. These bounce back to the originator email account in an attempt to advise an e-mail sender that the e-mail they tried to send was undeliverable. However, spam is often generated using e-mail addresses that are associated with well-known companies in an effort to appear legitimate. These multitudinous bounce-backs to uninvolved third parties can cause disruptions and outages resulting in denial of service. Additional costs include missed opportunity cost of customer orders or communications that are incorrectly discarded as spam.

Moreover, as the number of individuals who resort to the web for solutions to health or lifestyle problems increases, entrepreneurs will grasp the opportunities presented to offer potentially inferior or even dangerous products for sale over the web.[8]

From this study, it is apparent that useful internal institutional emails could be more easily identified if the subject concerned were to be clearly indicated in the subject line.

Anti-spam filters may unwittingly ensnare legitimate messages, and this cannot be afforded in an acute health/hospital setting. In this respect, our Government's filter may need tweaking of its current 'rules' insofar as to what it actually tags as spam. Otherwise, potentially important messages may be discarded or tagged as spam, or users must trawl through all of their email including all of their spam.

The tiny minority of individuals who abuse the freedom of the Internet clearly do so to the detriment of the vast majority and because of the short life of any active links found in spam, it is almost impossible to take direct and swift action against spammers.[9]

Many feel that the Internet would benefit from more regulation in order to reduce the global burden afflictions not only of spam, but also of hackers, viruses, hoaxes and pop-up adverts that continue to multiply unabatedly. This may never happen because of the free spirit of the WWW, and until it does, it is the responsibility of corporate governors and of individuals to protect themselves against outright malicious attacks and the pervasive nature of spam.[10]

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