

Getting to the Meat of SPAM

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Abstract

Spam is a part of everyday life. These unwanted, unsolicited emails are a constant nuisance and flood email boxes daily. The CAN-SPAM Act of 2003 attempts to address this issue, but there are glaring problems with this law, including the fact that third parties are not liable. If third-parties, such as Internet Service Providers (ISPs) and others, will spam ever stop?

The problem has been discussed in technical circles for years. There have been Request for Comments (RFCs) related to spam, such as RFC 2505, but most people seem to throw up their hands when faced with this problem.

This paper discusses the current interest in spam from an Intellectual Property (IP) aspect. It also discusses the problems with the CAN-SPAM Act of 2003 and gives RFCs to review. It's time we engineers got to the meat of spam!

Spam

Spam is unwanted email, the term itself being derived from a Monty Python sketch. It is not to be confused with Spam®, a registered trademark of a family of meat products made by Hormel Foods¹. In the Internet community, spam, the unwanted email, is not capitalized.

Spam ranges from a nuisance to a danger. A nuisance spam email is a chain letter, whereas a dangerous spam email is a fraud attempt, such as a bogus eBay mailing attempting to obtain personal information about a user. Many people are interested in spam, including legislators, researchers, and businesses. One interesting forum is held by The Massachusetts Institute of Technology; the next MIT Spam Conference will be held in January 2005². There is a great deal of interest in this subject, and it should be addressed in the engineering classroom.

CAN-SPAM Act of 2003

The bill was signed by the President on December 16, 2003, and became an effective law on January 1, 2004. This law was designed to eliminate, or “can,” spam, but it actually has very little bite. There is no liability for third parties, such as Internet Service Providers (ISPs), thus,

there is no incentive for anyone along the email route to hinder spam. In fact, there is only one subsection in this entire law dedicated to third parties. Section 6.b. is as follows³:

b) Limited Enforcement Against Third Parties-

- (1) IN GENERAL- Except as provided in paragraph (2), a person (hereinafter referred to as the 'third party') that provides goods, products, property, or services to another person that violates subsection (a) shall not be held liable for such violation.
- (2) EXCEPTION- Liability for a violation of subsection (a) shall be imputed to a third party that provides goods, products, property, or services to another person that violates subsection (a) if that third party--
 - (A) owns, or has a greater than 50 percent ownership or economic interest in, the trade or business of the person that violated subsection (a); or
 - (B) (i) has actual knowledge that goods, products, property, or services are promoted in a commercial electronic mail message the transmission of which is in violation of section 5(a)(1); and

(ii) receives, or expects to receive, an economic benefit from such promotion.

Obviously, it would be rare that an ISP will own more than 50% of the company sending the spam, so Exception A would not apply. Likewise, the ISP must have "actual knowledge" and benefits from the spam, again unlikely.

Therefore, the Can-Spam Act of 2003 is appropriately named; everyone CAN spam!

State Laws

Thirty-eight states have some type of law against spam. Unfortunately, federal law, the Can-Spam Act of 2003, may preempt these state laws. A state law cannot put more restrictions on spam than federal law. Thus, even though these laws exist now, they may not hold up in federal court.

Spam Request for Comment (RFC)

The spam problem has been discussed in technical circles for years. There have been Request for Comments (RFCs) related to spam, such as RFC 2505, but most people seem to throw up their hands when faced with this problem. The Internet Engineering Task Force (IETF) consists of a "large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of

the Internet.”⁴ RFC 2505 attempts to address stopping unauthorized mail relaying, dealing with spammers, and designing a mail system that can handle spam⁵. This RFC is a good source of information and is deemed the “best current practice.” A proposed standard⁶ is given in the bibliography, along with another RFC that recommends a set of guidelines to take against spam⁷.

Intellectual Property Indicates Growth of Spam

An Intellectual Property (IP) search shows an increase in spam. IP includes three traditional areas: copyrights, trademarks, and patents. All three areas have been researched with respect to spam.

Copyrights Indicate Interest in Spam

Of the three traditional areas of IP, copyright is the most difficult to quantify as anyone can copyright his or her original work themselves. Searching using the Google search engine on “spam” yielded 56 million hits⁸! Even if most, perhaps 95%, are duplicated sites, that still would be 2.8 million unique sites, which is a vast amount of possible copyrighted information. Unfortunately, this does not give an indication as to the growth, only the current status. Copyrights do give an indication as to the positive trend of the field; since the amount of copyrighted material is large, the interest in spam is huge!

Trademarks Show Proprietary Growth in Spam Interest

A trademark search, on the other hand, yields viable growth information for spam. Trademarks are propriety ownership, thus reviewing trademarks, with respect to spam, shows business interest in the spam problem. A search of the USPTO web-site for trademarks with spam, and limiting those results to ones related to email, yielded 160 trademarks⁹. The first trademark using the term engineering in its mark was submitted to the USPTO by EarthLink Network, Inc., for its mark, Spam Sentry, with a filing date of September 21, 1998. This is valuable information that shows that “engineering” has been used in business only since 1998. Note that the most recent trademark, for the mark qtask, submitted by Prolific Publishing, Inc., has a filing date of December 15, 2004. Further searching on spam yields more information. An exponential growth can be seen for all trademarks with the word “spam” in their marks or descriptions: In 1998, one trademark was filed; in 1999, 4; in 2000, 13; in 2001, 4; in 2002, 23; in 2003, 55; and in 2004, 60 trademarks were filed. Obviously, the greatest boom to spam within trademarks has been the two years. This information can be seen in Figure 1 below.

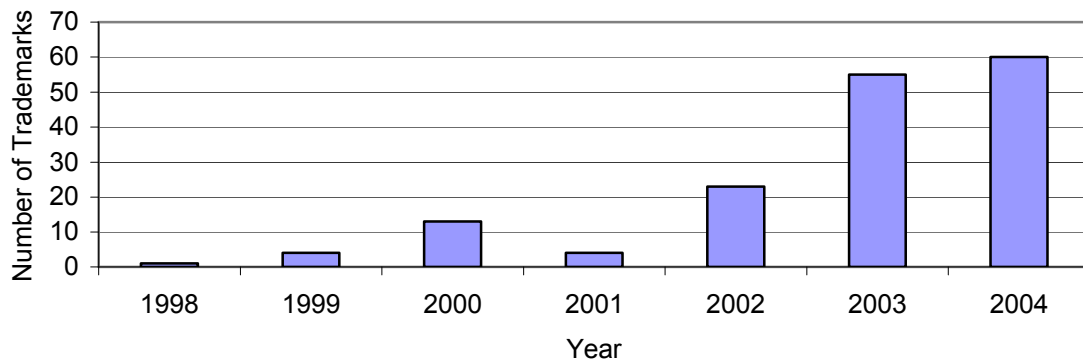


Figure 1. Spam Trademarks

Patents Reflect Growth in Spam Interest

A patent search gives a better indication as to the growth of interest in spam. Current research trends in a given field can be determined by the number of patents granted over time and the number of patent applications in the USPTO. As shown in Figure 2 below, there has been an explosion of spam interest.

Searching the USPTO web-site on "spam," with respect to internet email, shows that 143 patents have been granted¹⁰. Searching patent applications (patents not yet granted) shows 600 patents outstanding. The most recent patent is patent number 6,836,792, entitled, "Techniques for providing add-on services for an email system," issued December 28, 2004. The earliest patent granted was "Systems and methods for secure transaction management and electronic rights protection," issued April 6, 1999. Further investigation shows that in 1999, there were 9 patents granted; in 2000, 16; in 2001, 20; in 2002 and 2003, 27 each year; and in 2004, there were 44 patents granted. These trends can be seen in the graph below.

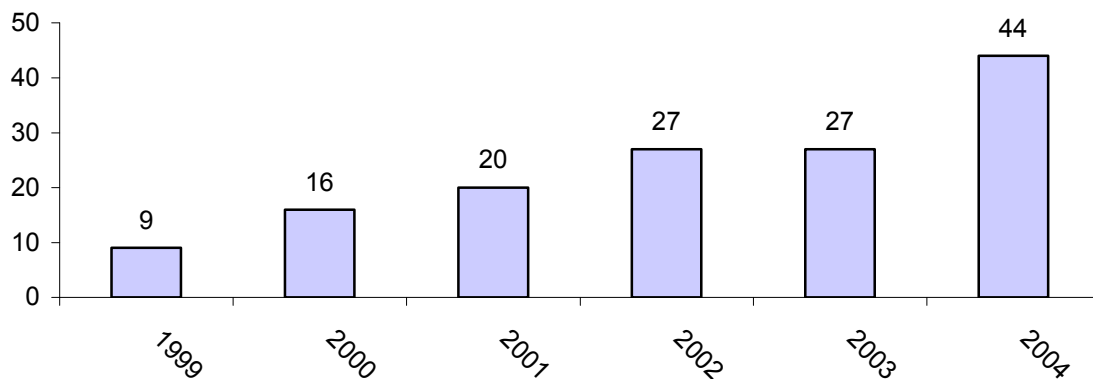


Figure 2. Spam Patents

Obviously, there is a sharp rise in spam patents, and will be even more dramatic if the 600 patent applications are granted in 2005. This is a clear indication of the increase in the interest in spam, thereby showing the increase in opportunities for future engineers.

ABET Requires Knowledge of Spam

Introducing the problems associated with spam into an undergraduate engineering curriculum need not replace any ABET (Accreditation Board for Engineering and Technology, Inc.) or any other accreditation board criteria. In fact, it would reinforce the goals of accreditation. In fact, of the eleven criteria required under ABET Criterion 3, stating the requirements for engineering graduates, spam knowledge would be included in at least two: “a knowledge of contemporary issues” and “an understanding of professional and ethical responsibility.”¹¹ Spam is a contemporary issue associated with engineering. Furthermore, it is an engineer’s professional and ethical responsibility to know about spam and how to protect systems from it.

Conclusion

Spam is a problem. It has been addressed by legislation, through the CAN-SPAM Act of 2003, and by researchers, through the Internet Engineering Task Force’s (IETF) Requests for Comments (RFCs). It is a very current problem and should be addressed in the engineering community.

This paper discussed spam, which, unfortunately, is a part of everyday life. The ineffectual CAN-SPAM Act of 2003 was reviewed, and Requests for Comments (RFCs) from the Internet Engineering Task Force (IETF) were given. A study of the interest that businesses and researchers have in spam was also given. This study was conducted by reviewing the Intellectual Property (IP) associated with spam; specifically, trademark, copyright, and patent trends were given. It was also shown that spam fits in the ABET criteria.

It’s time we engineers took a bite out of spam!

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⁵ Lindberg, G., “Anti-Spam Recommendations for SMTP MTAs,” RFC 2505, Feb. 1999, current best practice, <ftp://ftp.rfc-editor.org/in-notes/rfc2505.txt>.

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⁷ Hambridge, S. and A. Lunde, "DON'T SPEW A Set of Guidelines for Mass Unsolicited Mailings and Postings (spam*)," RFC 2635, June 1999, <ftp://ftp.rfc-editor.org/in-notes/rfc2635.txt>.

⁸ Google, <http://www.google.com>, searched Jan. 4, 2005, using "spam" as search term.

⁹ USPTO, United States Patent and Trademark Office, <http://www.uspto.gov>, searched trademarks using spam, internet, and email as search terms.

¹⁰ USPTO, United States Patent and Trademark Office, <http://www.uspto.gov>, searched patents and patent applications using spam, internet, and email as search terms.

¹¹ ABET, Accreditation Board for Engineering and Technology, Inc, 2004-2005, "Criteria for Accrediting Engineering Programs (2004-2005)," available: <http://www.abet.org/policies.html>.

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