

# Spam

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## INTRODUCTION

With the advent of the electronic mail system in the 1970s, a new opportunity for direct marketing using unsolicited electronic mail became apparent. In 1978, Gary Thuerk compiled a list of those on the Arpanet and then sent out a huge mailing publicising Digital Equipment Corporation (DEC—now Compaq) systems. The reaction from the Defense Communications Agency (DCA), who ran Arpanet, was very negative, and it was this negative reaction that ensured that it was a long time before unsolicited e-mail was used again (Templeton, 2003). As long as the U.S. government controlled a major part of the backbone, most forms of commercial activity were forbidden (Hayes, 2003). However, in 1993, the Internet Network Information Center was privatized, and with no central government controls, spam, as it is now called, came into wider use.

The term *spam* was taken from the Monty Python Flying Circus (a UK comedy group) and their comedy skit that featured the ironic spam song sung in praise of spam (luncheon meat)—“spam, spam, spam, lovely spam”—and it came to mean mail that was unsolicited. Conversely, the term *ham* came to mean e-mail that was wanted. Brad Templeton, a UseNet pioneer and chair of the Electronic Frontier Foundation, has traced the first usage of the term *spam* back to MUDs (Multi User Dungeons), or real-time multi-person shared environment, and the MUD community. These groups introduced the term *spam* to the early chat rooms (Internet Relay Chats).

The first major UseNet (the world’s largest online conferencing system) spam sent in January 1994 and was a religious posting: “Global alert for all: Jesus is coming soon.” The term *spam* was more broadly popularised in April 1994, when two lawyers, Canter and Siegel from Arizona, posted a message that advertized their information and legal

services for immigrants applying for the U.S. Green Card scheme. The message was posted to every newsgroup on UseNet, and after this incident, the term *spam* became synonymous with junk or unsolicited e-mail. Spam spread quickly among the UseNet groups who were easy targets for spammers simply because the e-mail addresses of members were widely available (Templeton, 2003).

## BACKGROUND

At present, the practice of spamming is pervasive; however, due to the relative recent nature of the problem and due to its fast changing nature, the discussion about the topic has been limited to academic literature. While in computer science literature there has been a concentration of work on the technical features and solutions designed to prevent or ameliorate the practice (Androutsopoulos et al., 2000; Gburzynski & Maitan, 2004; Goodman & Rounthwaite, 2004), the more general scientific discussion has been provided by a few scientific commentators (Gleick, 2003; Hayes, 2003), and the few books written on the subject (Schwartz & Garfinkel, 1998) have become outdated in a relatively short span of time. In other academic areas, there is some literature available concerning the legal implications of spam (Crichard, 2003) and the marketing dimension of spamming (Nettleton, 2003; Sipior et al., 2004); however, these, too, have suffered from the fast changing and global scope of the problem. Furthermore, aspects such as the social and political implications of spamming have been restricted to journalistic commentary in newspaper articles (BBC News, 2003, 2004; Gleick, 2003; Krim, 2004). In order to provide a broader focus in this article, therefore, the authors have supplemented this literature with interviews conducted with spe-

cialists in the field in order to provide the most up-to-date information, including interviews with Enrique Salem, CEO of Brightmail; Mikko Hyponnen of F-Secure; and Steve Linford of the Spamhaus Project.

However, while the broader issues of spamming have been discussed in the general literature reviewed, in the area of human-computer interaction, there has been a paucity of discussion, although this may change with the wider take-up of mobile devices with their context awareness. Notable articles that have touched on related issues in the human-computer interaction field have included those that have considered issues of privacy (Ackerman et al., 2001) and usability in particular difficulties with using computer technology (Kiesler et al., 2000). However, this is not to say that spamming does not play a role in reversing the convenience that many experience when using e-mail on their desktop, laptop, or mobile device, and it is often the most vulnerable that are affected adversely by spamming practice.

The mass appeal and use of electronic mail over the Internet has brought with it the practice of spamming or sending unsolicited bulk e-mail advertising services. This has become an established aspect of direct marketing, whereby marketers can reach many millions of people around the world with the touch of a button. However, this form of direct marketing or spamming, as it has come to be called, has become an increasing problem for many, wasting people's time as they delete unwanted e-mail and

slowing down the movement of electronic traffic over local and wide area networks (Salem interview, 2004; Goodman & Rounthwaite, 2004).

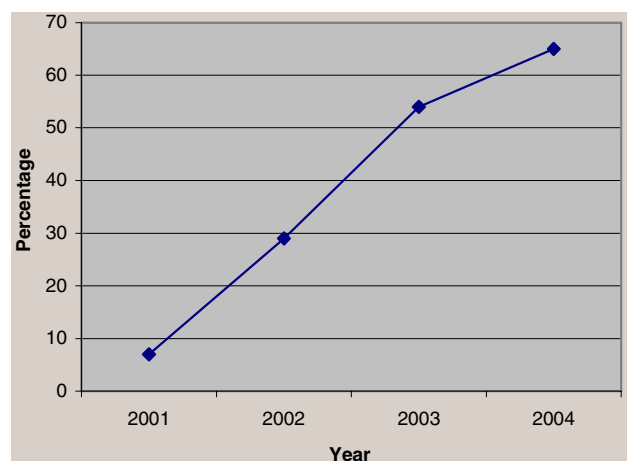
The scale of the problem has become particularly concerning in recent months; unsolicited e-mail—or spam—currently accounts for 65% of all e-mail received in July 2004 (Brightmail, 2004; Enrique Salem, CEO of Brightmail, interview 2004). Of the 70 million e-mails that Brightmail filtered in September 2003 alone, 54% was unsolicited, and that percentage is increasing year after year (see Graph 1). But although there are a number of different ways to filter unwanted e-mail, which may lead to a significant reduction of spam in the short term, many experts in the field are concerned that spam will never be completely eradicated (Hypönnen, F-Secure interview, 2004; Linford, Spamhaus interview, 2004).

## CRITICAL ISSUES OF SPAM

So who are the spammers? The spammers can be identified in three main groups: (1) legitimate commercial direct marketers, who want to make commercial gain from sending bulk e-mails about products and services; (2) criminal groups, including fraudsters, who are using spam to “legitimise” their activities and to defraud others (Gleick, 2003; Levy, 2004; Linford interview, 2004); and (3) disaffected individuals—crackers—who want to disrupt Internet services and who, in many cases, may have inside information about how the systems are structured. The criminal group is potentially the most dangerous, and while spam is not an illegal activity, this practice is set to spread to the criminal fraternity in China, Russia, and South America. This trend is becoming more widespread with the ease of obtaining spam kits over the Internet, which allows the potential spammer to set up quickly (Thomson, 2003).

Increasingly, illegitimate spammers, fraudsters, and crackers are joining forces to introduce fraud schemes such as the 419 scam and phishing (sending e-mails as if they came from trusted organisations) to convince unsuspecting victims to reveal sensitive personal information; in particular, to gain information about users' credit card information or to gain access details of online transaction services (Levy, 2004).

*Graph 1. The escalation of spam worldwide, 2001 to July 2004 (Source: Brightmail)*



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