

E-Business Technologies

Spam

Rafael Quiroz V.

30/06/2009

Professor Eduard Heindl

I, Rafael Quiroz Vázquez, declare this paper was written by me, and I include all the sources cited to elaborate it.

Content

List of illustration.....	4
Introduction.....	5
Definition.....	6
History.....	6
How does spam work?.....	7
Categories.....	9
Laws.....	11
Where is spam?.....	12
Battle against spam.....	13
Spam every day.....	15
References.....	16

List of illustration

- Illustr. 1: Internet E-mail spam percentage.....7
- Illustr. 2: Spam categories.....9
- Illustr. 3: Spam related with health.....10
- Illustr. 4: Global claimed regions of origin.....12
- Illustr. 4: Spam data each day.....14

Introduction

This topic is very important when we are talking about e-business. Nowadays, Spam is very popular and if someone wants to start specially an internet business, he should know at least the basic stuffs about SPAM. Some people could think that Spam is not useful, that it becomes disgusting and uncomfortable for the web users, etc. But, in the other hand SPAM is profitable and useful for many companies or organizations. So it is a controversial topic and it is better to be informed and then decide or set a personal point of view.

To understand what Spam is, it is important to know its origin, history and evolution along the years. Its environment it is also important, even if someone doesn't want to start an internet business, it is important to tune in about this topic, because it concerns to everybody and every year more people becomes web-users, therefore the e-business becomes more profitable and bigger.

One example of this growing of the "Internet market and Spam" is that every day millions of people receive by e-mail bulk messages, and there are several ways and reasons for sending this kind of messages, some people gets angry when they received this "cyber-garbage", another doesn't care about that, etc.

To know the importance of spam in e-business, we should know what spam is, advantages and disadvantages, the way spam operates, the laws that allegedly controls the spam, targets, how to avoid it and some statistics to get a better understanding of this topic and its presence on the Web.

Definition

Nowadays, all the web-users or at least 99% of them have been related with spam, but not all of them know the meaning of spam. I found a definition of it, and I chose it because it is clear and short: Spam is the abuse of sending unauthorized and inappropriate bulk messages.¹ Following the main characteristics:

1. It is sent to a lot of people.
2. It is normally advertisement or promotional.
3. It is not requested by the addresser or web-user.

Usually these characteristics are in spam and maybe they are the most important but it is not compulsory to have these features on the spam, also there are many kinds of spam. We can find spam in forums, blogs, messages, etc. but definitely the most common is the spam by e-mail.

There are also many kinds of spam, we can see normally advertisement or promotional spam, but which kind of advertisement? It is a long list of topics, since those that talk about medicaments and pills to those that contains pornography, so as we see there are several ways and reasons to receive spam. Spam has also been linked with fraud, financial, adult, health, leisure and products².

Internet Service Providers (ISPs), such as America Online, consider spam to be a financial drain and an impediment to Internet access because it can clog an ISP's available bandwidth.³

History

First, the term of spam comes from USA, in the 30's a company called "Hormel's spiced ham" develop a can which contains meat, these can didn't need a can-opener, to use it. It became the main food for the allied soldiers in the World War II. Then a British band made fun about the can-meat and popularized the term spam and then this word was adopted by the people to name the junk e-mail.

Spam has different names, like unsolicited bulk e-mail (UBE) and unsolicited commercial e-mail (UCE)⁴. Spam became popular in the early of 1990's when millions of people start to receiving junk e-

¹ *The definition of spam* (n.d.). Retrieved June 12, 2009 from <http://www.spamhaus.org/definition.html>

² *The state of spam* (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

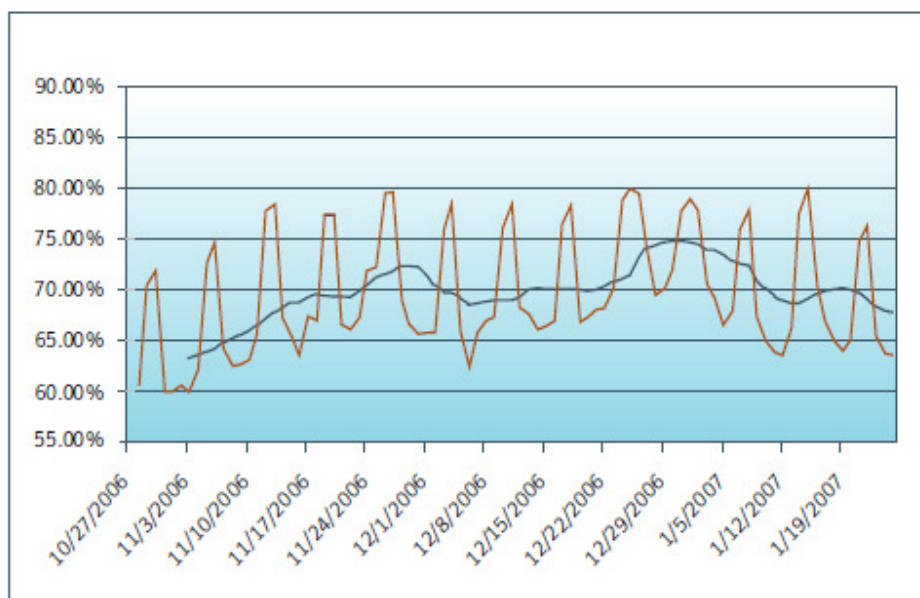
³ *How does spam work* (n. d.) Retrieved June 13, 2009 from <http://www.nolo.com/article.cfm/objectId/A6F26AE8-C831-469E-81157FC4252D98CB/104/284/220/ART/>

⁴ *The definition of spam* (n.d.). Retrieved June 12, 2009 from <http://www.spamhaus.org/definition.html>

mail with no reason, at the beginning it was confusing for all this people because the term was not known, it was difficult to understand what was happening. There are many versions about the creation of spam but I am not going to deep in this area.

Nowadays spam is a big problem at it grows every year, In the following graphic, it is shown the percentage of bulk e-mails in the year 2006/2007. That's why several firms are trying to decrease or eliminate the spam, actually it has been developed many ways of avoiding spam, But I am going to deep about it later.

Internet E-mail Spam Percentage



A trend line has been added to demonstrate a 7-day moving average.

5

How does spam work?

First of all, spammers need the e-mail addresses of all the people they want to “spam”. Both spammers themselves and list merchants scan the net in order to find as many e-mail addresses as possible to add to their lists. This process of e-mail addresses research is called address harvesting and is done without the consent of the recipient.⁵The easiest way to get the mails is to gather e-mail addresses from websites, also it is possible to purchase the information, a lot of people are able to share their information and trade it with the spammers. The spammers can also take advantage of the “e-mail chains” these kinds of mails are jokes that people use to reply to all the contacts but this process is a cycle that never ends, and the accounts of the contacts are saved in each message replied, then this mails are trapped by the spammers. Another way to get e-mail addresses is that

⁵ The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_February_2007.pdf

⁶ Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

spammers use any possible combination to send an e-mail. Therefore those who have a simple webmail have more chance to receive spam, than people that have long and complicated web-mails. Spam are extremely related with viruses, and usually the spammers sent message that contains viruses and it allows the spammer to have control of the victim's computers, it helps the spammer to spread easier its spam on the web, because they can scan the computers of the victims and collect as much information as possible. The computers of the web-users become tools for the spammers and the viruses they develop are created for different purposes. Spammers also use software to get the e-mail addresses of people, this software are called "harvesters" that pluck names from websites, newsgroups, or other services in which users identify themselves by email address.⁷

Spammers use several e-mail accounts, and some of them developed a way to create e-mail accounts automatically to send their spam. This war between spammers and those who are against spam has become very competitive and it goes on.

One of the reasons that spammers send these messages is because usually the advertisers don't send spam, they hire spammers to do the job, therefore the spammers send the same advertisement message to thousands of people and the spammer earns money from the advertiser. This kind of advertisement is cheaper than sending postal mailing to each person, besides the spammers don't spent money in the business, because the once who pay all this information trade through the web are the companies that provides the internet service, one of the biggest problems of spam is that queues the web with "rubbish-information" and it represents "money wasting". According with Yale, spammers are hired by real companies to send mass e-mail⁸, it means that a significant percentage of spam is marketing.

One fraudulent manner of working of the spammers is phishing, phishing is a type of deception designed to steal your valuable personal data, such as credit card number, other account data and passwords, or other information. The most common ways of phishing are:

1. It is possible to receive an e-mail message by someone the web-user know or a coworker.
2. On the social network site of the web-user.
3. On a fake Web site that accepts donations for charity.
4. On Web sites that spoof the web-user's family sites using slightly different Web addresses, hoping the web-user doesn't notice.
5. On the cell phone or any other mobile device.⁹

⁷ How does spam work (n. d.) Retrieved June 13, 2009 from <http://www.nolo.com/article.cfm/objectId/A6F26AE8-C831-469E-81157FC4252D98CB/104/284/220/ART/>

⁸ Recognize phishing scams and fraudulent e-mail (n. d.) Retrieved June 14, 2009 from <http://www.microsoft.com/protect/yourself/phishing/identify.aspx>

⁹ Recognize phishing scams and fraudulent e-mail (n. d.) Retrieved June 14, 2009 from <http://www.microsoft.com/protect/yourself/phishing/identify.aspx>

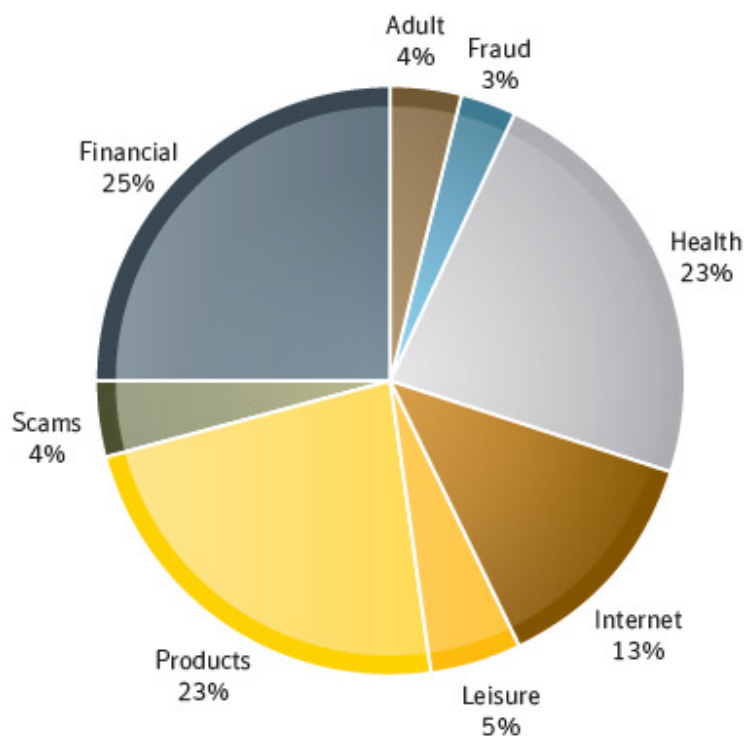
Finally, these kind of spam comes from sites that seems to be reliable for the web-user (specially banks) but they are totally fake, these kind of fraudulent spam are called scam.¹⁰ As we can see the final targets of the spam are to gain profits.

Categories

There are many kinds of spam, because those who create spam (spammers) need a reason or an interesting topic for the web-users to send them their junk e-mails. Inclusive, spam can be illegal because the topic or the service that it is being offered is illegal too¹¹.

In the following list, the most common types of Spam (more than 50% of spam is in these groups):

- Adult
- Health
- Internet
- Financial
- Leisure



12

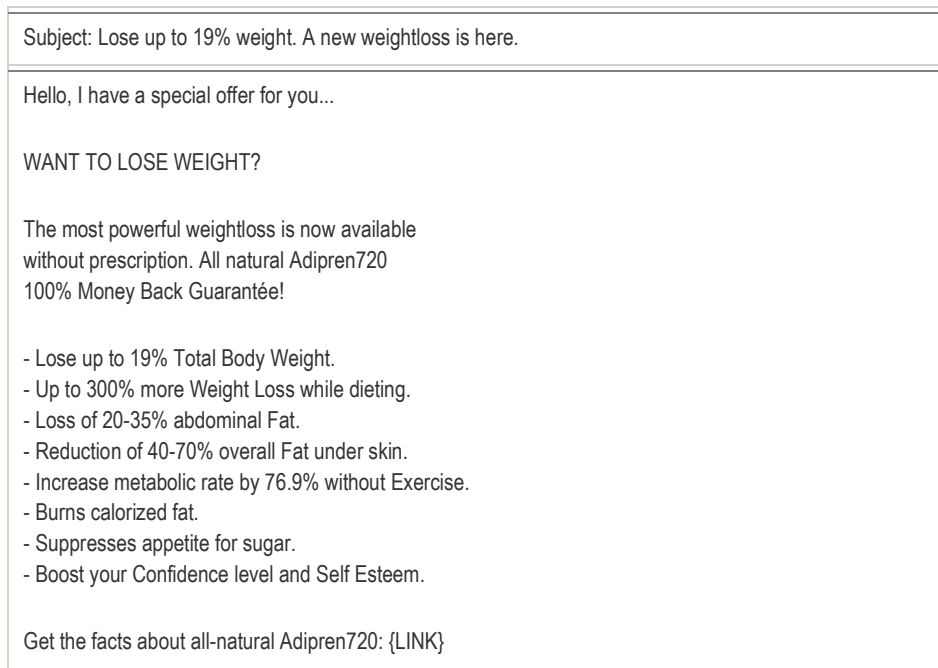
¹⁰ Recognize phishing scams and fraudulent e-mail (n. d.) Retrieved June 14, 2009 from <http://www.microsoft.com/spain/empresas/asesoria/scam.msp>

¹¹ The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

In the first group it is possible to find all kind of messages related with pornography since offering health-sexual products like Viagra to explicit images with sexual content linking to porn sites.

In the second group the most common spam are those who offered lose weight or medicine. These messages say that if you buy the pills or whatever, you will be able to lose weight in few days, they are also announced as dietary supplements or non-traditional medication and that it is possible to buy everything on-line.

It is attached an example of spam related with health.



13

It is visible that common interesting topics are related in spam, by this way it is possible to attain people's attention and then achieve it's truly objective.

In the third group (IT), spam says that it is possible to get hardware or software for low-price

In the personal finances group usually are offered insurances, low rates, etc.

In the last group it is offered online degrees or fabulous seminars, and it is visible, that the list can grow up easier because it is only necessary to look for a good reason to catch people's attention.

There is also an important spam category that I have not mentioned, it is called scam and it is when these messages offer the recipients a share of funds which allegedly cannot be accessed by the

¹² The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

¹³ "Tipos de spam" (2009) Retrieved June 28, 2009 from <http://www.viruslist.com/sp/spam/info?chapter=153350533>

sender for political reasons, in return for the recipient's help in legalizing these funds. The recipient is asked to provide bank account details; of course, if the recipient provides these details, the bank account will be emptied without their consent.

One of the worst things of spam is that anybody in some place in the world with a computer and internet can create spam and big problems to a lot of people in any place very far, it is not so difficult.

And is it important to remark that there are categories of spam that are more dangerous than the others.

Laws

The web-user and the people involved in the Internet complain about the spam, and sometimes they asked themselves, why does the government not make or develop any law that prohibits sending advertisements or commercials by e-mail. In fact is it not possible to control, but the governments can define which kind of advertisement is legal which kind of advertisement can be delivered without being spam. The question is if the web-user agree with receiving advertisements by e-mail. According with David Harris, there are two possibilities in this case: Opt-in and Opt out.

Opt-in means when the web-user agrees to receive this kind of advertisement, therefore they know which kind of commercials have been delivered in their e-mail.

By the other side, in opt-out assent is not required to send unwanted material: instead, the recipient must take some explicit action to indicate that further unwanted material should not be sent.¹⁴

These two options are not developed yet, and it is possible to find further information on the following website:

http://www.euro.cauce.org/en/countries/c_uk.html

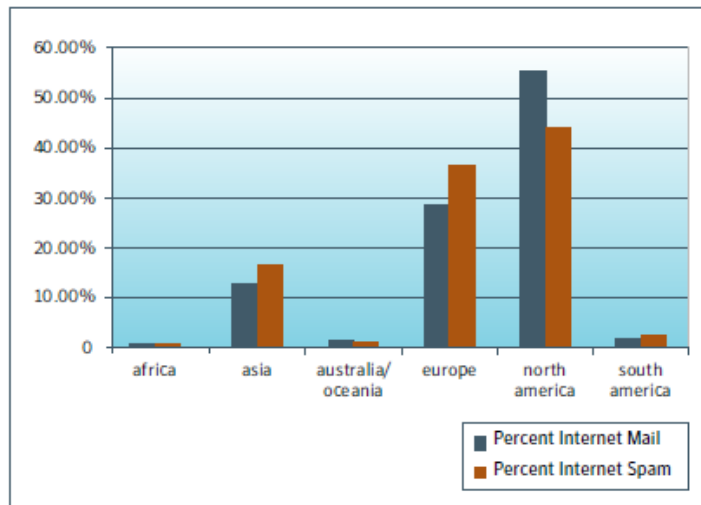
The government of the US gives another possibility, they think it is better to bring an action against the offender (spammer), but these laws are not well developed yet, because the fine for infringement is not so big, so this infringement doesn't justify take action in the case. It would better to establish higher fines for the infringements.

According with symantec more than 40%¹⁵ of all spam in the world in 2007 was created in the USA.

¹⁴ Harris David. (2003). *Spam, the curse of the new millennium: an overview and white paper*.

¹⁵ The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

Global Claimed Region of Origin (90 Days)



16

Therefore the US government should make an effort to create advanced laws against spam, because it concerns the rest of the world. It is possible to find more information about the spam laws in the US in the following webpage:

<http://www.spamlaws.com/federal/list108.html>

One big problem in the US with the spam is that legislations varies in every state, so there are states that are stricter than the others, beside there are three states with no legislation against the spam, in this case it is necessary a new structure but it involves also big investments.

Although the US needs “reforms” in spam legislation, they should also get agreements with the other countries, they should achieve common points of view to get the better legislation in each country and then work as a team against the spam. Otherwise, in some countries like Spain, the spam is strictly prohibited by the law: “Ley de Servicios de la Sociedad de la Información y de Comercio Electrónico¹⁷”. Since July, 2002.

Finally, it is clear that each country has its own point of view, they should achieve an agreement together, because the actions or the infringements against the web-user made in one country affect the web-users of all the world.

Where is spam?

¹⁶ The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

¹⁷ “Obligaciones de información sobre la seguridad”. (2008) Retrieved June 21, 2009 from <http://www.lssi.es/Secciones/Contenidos/Obligaciones/contprin2e.htm>

There are many ways to find spam in internet, maybe the most common is by e-mail, that is way I focus in spam by e-mail, but it is also important to know the other ways to find spam, because as I said before spam has become very popular and it will possible continue expanding in the future.

The other common ways to find spam are:

1. Blog
2. Forum
3. Social networks
4. Mobile
5. Internet relay chat

Usually all these kinds of spam just want to attract the attention of the web-users and the final objective is to link the message to a special webpage, such kind of advertisement. For example, in the blogs it is possible to find a message that maybe it is not related with the main theme of the blog and if the web-user clicks over the message, it links him to another webpage related to the message.

The second one is by forum, in this case anybody can write links that to another page that has the same topic of the forum, or it can be linked to a webpage related with the forum.

Sending spam with social content like job offers, or advertisement related with these topics are also very common.

Spam in the mobile technology is very popular, because cell-phone industry has become solid, nowadays the percentage of cell-phone owners in developed countries is very high. It is also an interesting way for the spammers to make their business.

The last common way to find the spam is by Internet Relay Chat (IRC), also known simply as Chat, it is easier for anybody (like the forums) to write a message with a link to another page related with the message of the writer, this kind of spam is important because anybody can do it, without experience in spamming.

Battle against spam

There are many techniques that can be used by the web-users to combat the spam, before name these techniques, it is important to know that the war between spam and those who are against it, is growing every day, therefore there is no technique 100% effective and once a web-user or an internet company wants to use one or more techniques, they must consider that it also takes money and time.

These techniques according with Peraldo are classified in 4 groups:¹⁸

1. End-user technique
2. Automated techniques for e-mail administrator

¹⁸ Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

- a) Filtering techniques
- 3. Automated techniques for e-mail senders
- 4. Ongoing research¹⁹

On the first category are grouped the techniques that every web-user can follow, those are rules that always is important to keep in mind. First of all the web-user never pay attention to the spam, therefore the web-user must not reply a spam e-mail. The e-mail addresses of the spammers are not real. Don't pay attention to the messages that contains the spam, even if they say that the web-user e-mail will be eliminated from the list if he click's on the message. There is also a technique called "address munging" (disguise),²⁰ as it name says, It is when the web-user change the appearance of his e-mail, so it is impossible for the "spammers software" or machines to know the real address of the web-user.

In the second category are the software or automated tools that avoids the loading of spam e-mail in the inbox of the web-users. In this category we can find two sub-categories, blocking and filtering. The first one is the one who rejects messages and all things that looks like spam and the second one analyses the each e-mail per each e-mail to know which is possibly spam and then block it. There are some filters that only accept messages from trust sites, the other ones are blocked.

The filters analyses the message, since the header to the content, the filters are updating often to identify those words that are usually in the spam, but this is a "never ending" war because the spammers also try to change this words and get a better costume for their spam.

In the third category (automated techniques for e-mail senders), sometimes we complain about receiving too much spam, but we can be spammers also, so it is necessary to make sure that we are not sending spam. Besides new techniques used by the ISP (Internet Service Provider) and the web e-mail provider, allow them to identify if people that make an account are real and their features are correct, or if they are only spammers trying to create a new e-mail account, these technique is called (CAPTCHA).²¹ There is also a service called spamcop, it is a spam report service, they gather information about the spam and also to report offenses, then it is possible to have a database of the sites or anything in the web that could being related with spammers. Finally all these information ends in something similar like a "blacklist".

In the final category, (ongoing research) according with Peraldo²²: there have been many proposals to achieve a better optimization in the e-mail. It is supposed that the exaggerated quantity of e-mails on the web is because sending messages is totally free, it would be better if every sender pays a small quote of money for each e-mail sent, so it would be very expensive for the spammers send thousands of mails every day.

¹⁹ Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

²⁰ Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

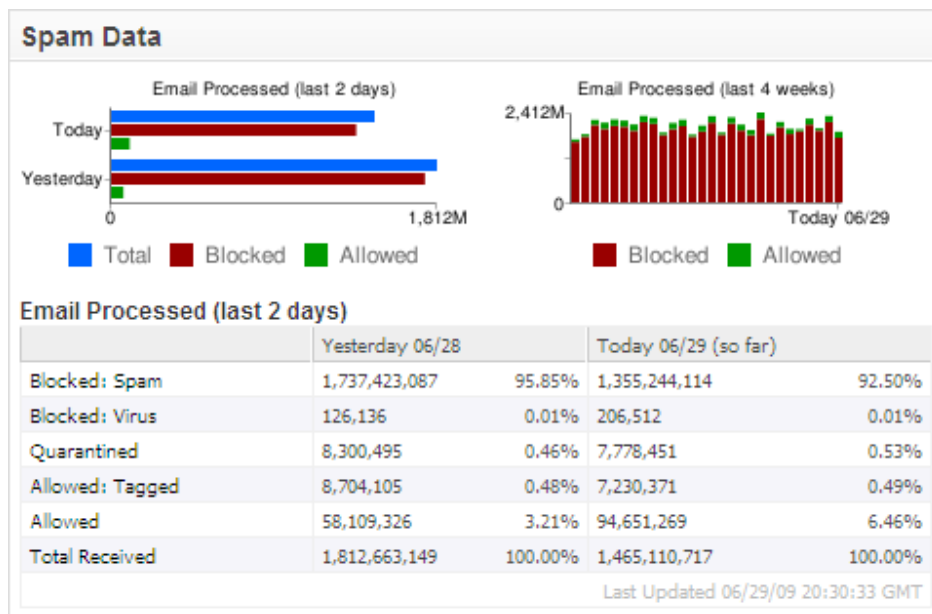
²¹ Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

²² Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

In 2002 Bill Gates proposed to charge a sum to the senders for each e-mail cataloged as a spam, the receiver was supposed to decide if the e-mail received was or not spam, but this was just an idea and know there is no a concrete solution to this problem.

Spam every day

Finally I attach graphics about the behavior of the spam during the last two days on the internet. Mainly, these graphics show the quantity of spam that are on the web every day, those which were blocked and those which were allowed, it allows us to realize the quantity of information that spam charge every day. It shows the great problem (market) that spam is and also the effort that the organization and people against spam must perform to eliminate spam from the Web.



23

This webpage is available each day to see the quantity of spam detected every day, also Barracuda fights against spam, it helps to stop the spread of it, it controls and monitor the latest internet treats.²⁴ These graphics also show the behavior of other treats of the web like virus.

²³ Spam data (2009). Retrieved June 29, 2009 from <http://www.barracudacentral.org/index.cgi?p=spam>

²⁴ Spam data (2009). Retrieved June 29, 2009 from <http://www.barracudacentral.org/about>

Reference

Spam data (2009). Retrieved June 29, 2009 from <http://www.barracudacentral.org/about>

Spam data (2009). Retrieved June 29, 2009 from <http://www.barracudacentral.org/index.cgi?p=spam>

Peraldo Lorenzo, (2008). *Anti-spam techniques* Retrieved June 25, 2009 from [http://en.wikipedia.org/wiki/Spam_\(electronic\)](http://en.wikipedia.org/wiki/Spam_(electronic))

“Obligaciones de información sobre la seguridad”. (2008) Retrieved June 21, 2009 from <http://www.lssi.es/Secciones/Contenidos/Obligaciones/contprin2e.htm>

Harris David. (2003). *Spam, the curse of the new millennium: an overview and white paper*.

The state of spam (n. d.) Retrieved June 28, 2009 from http://www.symantec.com/avcenter/reference/Symantec_Spam_Report_-_February_2007.pdf

The definition of spam (n.d.). Retrieved June 12, 2009 from <http://www.spamhaus.org/definition.html>

How does spam work (n. d.) Retrieved June 13, 2009 from <http://www.nolo.com/article.cfm/objectId/A6F26AE8-C831-469E-81157FC4252D98CB/104/284/220/ART/>

“Tipos de spam” (2009) Retrieved June 28, 2009 from <http://www.viruslist.com/sp/spam/info?chapter=153350533>

Recognize phishing scams and fraudulent e-mail (n. d.) Retrieved June 14, 2009 from <http://www.microsoft.com/protect/yourself/phishing/identify.msp>

Recognize phishing scams and fraudulent e-mail (n. d.) Retrieved June 14, 2009 from <http://www.microsoft.com/spain/empresas/asesoria/scam.msp>