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1 Introduction

The widespread use of the Internet in business and social relationships has had a significant impact on the content of users’ inboxes. Radicati Group said, in 2014, there is more than 4B email accounts worldwide for more than 2.5B users (Business and Consumer email users). The major part of email sent and received worldwide come from the business world, with more than 108,7B email per day. Most users receive a significant amount of non-priority email such advertising, social networking notifications, which are known as graymail. This graymail fills up the inbox and obscures the more important email messages. Employees spend 28% of their day reading and answering emails, according to Mc Kinsey Institute.

Email clients need to provide tools to make email sorting more efficient and safe to avoid an overloaded inbox. According to the Gartner report Magic Quadrant for Secure Email Gateways 2014, “End users don’t care about the clinical definition of spam and are frustrated with the level of ‘unwanted’ email in their inboxes.”. Users see any unwanted email as spam, even if it’s legitimate content such as newsletters or mailing list messages that they signed up to receive.

The industry must find a better way to classify messages so that legitimate email can be sorted from spam, or email will lose its effectiveness as a commercial communication channel, hurting both businesses and users. Industry solutions are focus on spam filtering; in this document we will demonstrate why it is not enough to use email efficiently.

After a brief explanation of the Graymail concept, this document will display email stream from the business world and consumer market. Then we will focus on benefits of subscription management before conclude.
2 Classification of graymail

Description

With the increase in email and online communications, it is more important than ever for users to have an easy way to organize the contents of their inbox to distinguish priority email message from graymail. Here is a summary of the differences.

Priority email

Priority email messages include the following:

- Interpersonal email (messages from friends, family, or business associates)
- E-tickets (such as flight information or concert tickets), order confirmations, bills
- Alerts (such as jobs, real estate listings, classified ad responses)
- DSNs, MDNs, and NDRs (delivery or disposition notifications, bounces, and receipt confirmations)

Graymail

Graymail messages are low-priority, but still of value, and include the following:

- Deals, advertisement
- Newsletters
- Social networks notifications (such as Facebook, Twitter, LinkedIn)
- Online dating website notifications (such as Match, Meetic, Badoo)
- Forum messages (such as Yahoo! Groups, Google Groups)
- Mailing lists

By sorting incoming messages into these two categories and routing graymail to a special inbox, users can easily identify the most important email. In this way, email that the user should read and act on is in the primary inbox, and low-priority mail is in the graymail inbox for later viewing.

Senders might see graymail management as a threat to their legitimate business at first, but it does benefit them. Instead of deleting non-priority email without reading it, users already have a clean inbox. When they finish reading their priority messages, they can look at their ads and newsletters. As a result, ad campaigns can be more effective because more users will read them.

Graymail classification is a digital version of mail sorting and distribution in large companies, where they classify and distribute letters and packages to get to the right person at the right time.

Senders are also concerned about mass unsubscription waves. While this does happen, those subscribers who retain their subscriptions are genuinely interested, so even though the number of subscriptions decreases, the quality of the database increases. As a result, the return on investment is better for senders and users feel less pressure. Their KPI is also improved, as subscribers recognize the messages as legitimate email and read it rather than marking it as spam.

In addition, graymail classification organizes a user’s inbox and sustains its long-term use.
Findings: Email flow - General study

The general study focuses on the residential and business markets to see what kind of email they are receiving. This double study compares personal/social email to graymail, to understand the best way to adapt a graymail strategy. Residential users will get more social email, while corporate markets receive more professional newsletters and solicitations.

Corporate Market

The chart below displays the email distribution of a business inbox, after applying a spam filter. All companies now have an antispam solution in place, but typically have reached the limits of its capabilities as it cannot manage graymail.

Context of the study:
- Number of domain names: 13,200
- Number of users: 74,380
- Number of email account: 220,000
- Number of email messages per day: ~9,000,000/day
- Time period: 2 months
- Geographic coverage: USA

First of all we can see that there is much more accounts than users. Many employees manage different mailboxes, which increase the graymail pressure. In this study, each user has 3 mailboxes. However, we have to consider generic addresses and unused. The findings of this study are that 1 out of 2 email messages received by business users is some type of graymail (newsletter, advertising, or social network notification).

Antispam filtering protects the mailbox to make it safe and efficient to use, but this study clearly shows that spam filtering is not the critical point for IT management. Now, employees also have to sort their inbox for graymail, and can miss an important message by cleaning it too quickly.
**Consumer market**

The graph below shows the email distribution of a consumer inbox after applying a spam filtering.

**Context of the study:**

Geographic coverage: Mainly Europe, North America, Russia and Japan

Number of inboxes: ~150 Million

The findings of this study show that users receive a large amount of graymail. Surveys, newsletters, advertisements, and social networking messages all generate traffic for their website, and help provide a source of income.

The graymail rate of 84% on a residential email account is way too much for efficient inbox use. Many mailboxes are overloaded by low-priority emails that are mixed in with important messages. If users don’t manage their messages every day, which can take some time, finding the important messages becomes difficult and inefficient.

The goal of graymail management is the “inbox zero” concept, keeping at least the primary inbox empty (or almost empty) at all times.
Findings: Email flow - Focus on the big players

*Background of the Study:*
These samples were taken from the statistics on LoveYourEmails.com, a site offering free IMAP filtering and unsubscribe services for the consumer market.

Items classified by LoveYourEmails.com were identified after filtering the provider represented.

<table>
<thead>
<tr>
<th>Legend</th>
<th>Priority email</th>
<th>Social network notification</th>
<th>Graymail</th>
<th>Spam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Green</td>
<td>Blue</td>
<td>Orange</td>
<td>Red</td>
</tr>
</tbody>
</table>

### AOL
- Priority email: 76%
- Social network notification: 5%
- Graymail: 18%
- Spam: 1%

### AT&T
- Priority email: 42%
- Social network notification: 6%
- Graymail: 36%
- Spam: 16%

### Yahoo Mail
- Priority email: 20%
- Social network notification: 7%
- Graymail: 9%
- Spam: 64%

### GMX
- Priority email: 6%
- Social network notification: 0%
- Graymail: 4%
- Spam: 90%
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- **Outlook.com**
  - 33%
  - 17%
  - 3%
  - 47%

- **Gmail**
  - 43%
  - 10%
  - 3%
  - 44%

- **iCloud**
  - 79%
  - 17%
  - 1%
  - 3%

- **Libero.it**
  - 33%
  - 31%
  - 27%
  - 9%

- **Comcast**
  - 61%
  - 31%
  - 6%
  - 2%

- **Videotron**
  - 39%
  - 36%
  - 21%
  - 4%
The study emphasizes all inbound streams from many email providers. Note that this data comes from the service Love Your Emails, which is a filtering service added in addition to the antispam services provided by these players. The spam messages detected by Love Your Emails were not filtered by the solutions provided by these ISPs.

The spam rate varies from 3 to 36%, depending the provider. The average rate of spam caught is 8.5% of emails are “smarter” spam, meaning they elude a basic antispam solution. This also means that for every 100 email messages, 9 are spam. In 2014, spam filtering must become more reliable, because of the issue of graymail. Rate over 3% of spam are critical for the email provider.

Graymail accounts for between 21 and 90% of the inbound stream. All of these messages have to be classified as graymail and sent to a separate inbox or folder.
Findings: Feedback Loop - General Study

**Study**
The figures presented below are from a study conducted on the feedback loop of Internet service providers before employing a graymail solution. A feedback loop is an email flow generated by each click a user makes on the "This is spam" (false negatives) and "This is not Spam" (false positives) buttons. Users generate a feedback loop, as a reaction to the spam filtering decision made by the technology (vendor or open source) used by their webmail or mail client.

**Comment:**
Graymail accounts for 94% of false negatives, email marked by users as spam. The user marks items as spam to show dissatisfaction with receiving graymail email in the inbox along with priority email.

This simply means they don’t want the graymail in their primary inbox.
Comment:
Graymail accounts for 7% of false positives, email marked by users as not spam. This means that when the graymail is sent to the spam folder, users rarely read it.

Conclusion

The number of users complaining about receiving too much email is significantly greater than the number of users who want these messages in their inbox.

Users do see an intermediate category between spam and ham, as the graymail appears in both false positives and false negatives.

The intermediate category of graymail provides a classification nuance that meets a current user need.
Why Antispam is not enough anymore?

Study of solutions in place on the ISP market/Inbox providers

This study focuses on key players who led visible activities of categorization of non-priority messages.

**Gmail**

Gmail offers classification of graymail in four separate categories:

- Social: Social network notifications
- Promotions: Deals, advertisements
- Updates: Receipts, confirmations
- Forums: Forum messages

These messages are sorted into tabs. For example, Gmail reviews the Primary inbox and extracts any automatically sent email, such as e-tickets (flight information, concert tickets), order confirmations, bills, or alerts (jobs, real estate listings, classified ad responses), placing these messages in the Updates tab.

**Outlook.com**

Hotmail offers classification of graymail in separate folders:

- Newsletters: Newsletters, deals, advertisement
- Social updates: Notifications from social networks (Facebook, Twitter, LinkedIn)

Hotmail also offers other folders to organize emails (such as family, shipping updates, shopping, and travel), but the user must manually organize these.

**SFR**

SFR is the second largest Internet service provider in France. France provides an “Info-pub” tag (news-ads in English) for the identification of commercial emails and newsletters. SFR leaves social networks notifications, notifications, and online dating website forums messages in the user’s inbox.
3 Unsubscribing from Graymail

Description

Users can unsubscribe from graymail. However, they rarely take advantage of this for a number of reasons.

- Many users do not know that it is possible to unsubscribe, often because advertisers do not make this option obvious. Advertisers want keep customers on their mailing lists.

- Out of habit, most users follow one of two courses when receiving graymail, instead of unsubscribing:
  - Deleting the message
  - Clicking "This is spam" to mark the message

- When users wish to unsubscribe, the procedure is sometimes complex¹:
  - The unsubscribe link is often difficult to find in the email message.
  - The cancellation procedure can be complex. The user is asked to enter the reason for unsubscribing, to log in with their username and password, and sometimes to type a CAPTCHA. Some senders send the unsubscribe link to a “subscription manager” that often asks for identification.

Some users are reluctant to click an unsubscribe link for security reasons. Most users are aware of the proliferation of viruses and malware. It is understandable that if a user receives an advertisement that they did not—to their knowledge²—request, they are reluctant to click a link to unsubscribe.

- In some cases, the Unsubscribe link confirms the validity of the email address, instead of removing it from the sender’s base, so trying to unsubscribe can create more unwanted mail.

¹ The objective of this complexity is to slow down the departure of the user. However, effectiveness of this is debatable, because it can create strong customer dissatisfaction.

² Most users remember advertisers that they subscribed to, but they rarely know the partners of those advertisers, which are also included with the subscriptions.
Findings

Unsubscribe options available to users

Unsubscribe links are made available to users:

- The List-unsubscribe header: This header is included in the message that contains the unsubscribe links for the campaign. Users cannot easily access this link because it is not displayed when viewing the message.

Example of a List-Unsubscribe link:

```
List-Unsubscribe: <mailto:unsub-e63: <ma.s901sub-e29@bnc.mailjet.com>
```

- Links in the body of the message: This visible link allows the user to unsubscribe by clicking. However, it typically appears in the small print at the end of the message and is hard to locate.

Example of an unsubscribe link at the bottom of the message:

In both cases, the unsubscribe processes are based on choice of the advertiser:

- Unsubscribe via mailto
  The user transmits an email to the address in the link to indicate that they wish to unsubscribe.

- Unsubscribe via http
  The user consults the unsubscribe page of the company website and follows the directions.

This screenshot shows how difficult the unsubscribe process can be. For a human, it is ambiguous and requires effort, and for a computer, it is hard because of many check boxes.
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Refer to the following RFCs:

- RFC 2369 - The Use of URLs as Meta-Syntax for Core Mail List Commands and their Transport through Message Header Fields
- RFC 2368 - The mailto URL scheme
Why Antispam is not enough anymore?

Rate of utilization of the various means

Use of List-Unsubscribe header in graymail

- Yes: 39%
- No: 60%

Mailto vs. Web unsubscribe process

- mailto: 41%
- http: 58%
Study of the Solutions in Place on the ISP Market/Inbox Providers

This study focuses on key players who led visible actions to facilitate deregistration of non-priority messages.

**Gmail**

Gmail provides the opportunity to unsubscribe from a graymail in its webmail. Users can simply click the Unsubscribe button that is offered after the address of the sender of the email to unsubscribe. This button is visible when viewing the message.

This feature is available for email that meets the following two conditions:

- The presence of a List-Unsubscribe header to facilitate the extraction of the Unsubscription URL
- The presence of a mailto type unsubscribe URL

When the user clicks the Unsubscribe button, an email is sent to the sender to notify them of the request. This email complies with the terms defined in the mailto URL (such as preset subject).

**Representation of the unsubscribe from Gmail**

![Unsubscribe button example](image)

**SFR (European ISP Leader)**

SFR offers the opportunity to unsubscribe from graymail on its webmail via an Unsubscribe button shown in the message list and while viewing the message.

- This feature works regardless of the type of unsubscribe offered; the presence of a header List-Unsubscribe is not essential.
- The URL can unsubscribe from mailto or http.
  - If the URL is a mailto type, an email is sent to the sender to notify them of the unsubscribe request.
  - If the URL is an http type, the unsubscribe scenario is being played on the sender website.

SFR also uses information from deregistration to manage senders. They keep track of any advertisers receive unsubscribe requests but continue to transmit email to the user after the legal deadline. These senders have points removed from their reputation in the reputation management.
4 Conclusion

Graymail invasion is a new problem in email management. Too many commercial messages and newsletters are sent to mailboxes worldwide, and there is a growing need for an effective way to manage these messages. As seen in this document, in the business world, graymail accounts for more than 50% of all email messages. In the consumer market, the average is 84%. Most users have a minimum of two email addresses, one personal and one business. Every morning they need to clean up two inboxes to stay on top of their email. Both tasks are part of the same issue, because most employees do personal email during working hours.

Most players in the email security market are focused on filtering spam, and antispam is now a standard feature for all email providers. Nevertheless, spam filtering is not enough anymore to manage efficiently the mailbox. Spam goes directly into the spam folder but all non-priority emails still land into the primary inbox. Users don't care about the clinical definition of spam; they just receive too many emails they are not interested in. The Graymail Management, including classification and subscription management helps end user in this way to keep a clean and easy to use.

There is still a need for a global solution, however. In the Gartner report Magic Quadrant for Secure Email Gateways 2014, one of six product features deemed most important under the Completeness of Vision category is “marketing and graymail classification and personalized controls for the management of this type of unwanted email.” Most vendors do not provide a solution for this.

In addition to meeting a real user need, the management of graymail improves the user experience for all of the players in the email ecosystem, including inbox providers, senders of the email, and service providers.

With a graymail management solution, end users can easily control their inbox and have a more satisfactory email experience. Emails are properly sorted, and users can easily identify important emails and then:

- Easily unsubscribe from graymail.
- Gain productivity through inbox zero.

They benefit of a virtuous circle made by Graymail Management. The more you unsubscribe the less you spend time classifying your graymail. Users can now receive emails they care.
The email provider gains these benefits from the management of graymail:
- The number of complaints is decreased, reflecting an increase in the satisfaction of end users.
- The feedback loop regains its original purpose, containing complaints of unwanted emails.
- The use of bandwidth is optimized.
- The use of storage is also optimized.
- The risk of false positives is reduced compared to unsubscribing by blacklisting addresses.

And senders get these benefits:
- The number of complaints is reduced, which improves their reputation and their deliverability.
- Opening rate and engagement increase
- The return on investment by email sent increases as the target of the campaigns is more accurate.

A graymail solution through smart folder classification is a critical tool in the future of email management. Without this solution, the burden is on the senders to find ways to retain subscribers and their business, or their email campaigns will become ineffective as a marketing channel.
About
Vade Retro Technology

Protecting more than hundreds of millions of e-mailboxes worldwide, Vade Retro Technology is the messaging system specialist against all unwanted messages.

In addition to protecting most of the biggest French and International internet providers, the company counts under its protection thousands of SMEs and wide companies, and millions of self-employed and private users.