Messaging, Malware and Mobile Anti-Abuse Working Group (M3AAWG)

Exploring the Impact of Nonhuman Interactions on Email Send Metrics

November 2020

The reference URL for this document is: https://www.m3aawg.org/sites/default/files/m3aawg-nonhumamn-interactions

Table of Contents

1. Introduction

Received email may not be handled only by a human. It may be partially or even fully handled by a software program. The purpose of this document is to offer guidance to marketing and sales staff about the way that nonhuman interactions (NHI, also known as "automated clicks") affect the performance metrics of their email messages and reporting systems. This document is not intended to solve issues, but rather to provide insights into the effects of NHI and offer some best practices for senders.

In the past several years there has been steady growth on NHI affecting email engagement metrics. What started as a statistical anomaly has become a major issue affecting email campaign metrics in a massive way. NHI usually occurs during security scans as part of a mailbox provider's antivirus or security software checks. As the system follows the links in an email, it visits the target website and analyzes the content, which affects website analytics along the way. They result in a "click" or an "open" being recorded for the email campaign. This can appear in statistics as anything from clicks on a subset of links in one email, to having every single link in every email sent to that domain clicked in quick succession.

The goal of these security scans is to catch URLs pointing to dangerous or malicious content, like websites that host malware or phishing pages. To ensure that security scanning is not circumvented by bad actors, these link scanning patterns are often not obvious.

For many years marketers and other email senders have relied heavily on open and click rate metrics to measure campaign performance. Due to the impact of NHI, marketers may need to start looking for additional metrics to measure success.

2. Impact of Nonhuman Interactions

2.1. Methodology

In order to determine the impact on click rate statistics due to NHI, data from both large and small ESPs were used for benchmark testing. Both Business to Business (B2B) and Business to Consumer (B2C) senders were included. The data set represented senders across the industry, and in some cases spanned several years of send, click and open data. The goal was to better understand the impact of NHI on email click rates. To do this, it was important to understand:

- Whether browser user-agent strings could be reliably identified, and

- Whether it would be possible to reliably filter NHI to ensure that marketers could achieve a reliable click rate when tracking email performance.

2.2. Findings

Business to Consumer
These senders typically focus large volumes of email to a smaller set of large inbox providers and have an offering that is often consumer focused. NHI rates on the B2C data set generally experienced less than 10% impact. This was consistent throughout the research. For more reputable brands, the impact was weaker.

Business to Business
These are typically senders who mail mainly to individuals at other businesses. These businesses are more likely to have enterprise level anti-spam software which is more strict when checking inbound mail. NHI for B2B was much more generalized. Data collected but not published show that overall impact was found to be between 20–80%. This range was found to be relatable to the recipient's

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engagement with the sender. Research showed that for those whose recipients had a lower engagement base, at an ISP/inbox provider, had a higher probability of NHI scans.

2.3 Industry Impact

With this round of testing, it was not possible to meaningfully break out NHI level by vertical market segment.

Overall Impact
It is hard to quantify a summary effect, as most filter agents and ISPs work to mask detection. This is necessary to ensure filters are not circumvented, which would ultimately negate their effectiveness. As a result, any efforts to filter such activity would still leave ESPs and senders with some margin of error when calculating, NHI adjusted rates. In general, though, it can be said that senders have experienced varying levels of impact on their click and open rates as a result of NHI. In light of these data and the strong correlation between reputation and NHI, M³AAWG recommends focusing on building and maintaining a positive reputation to help lessen the overall impact of NHI on open and click rates.

3. Business Impact

3.1 Cost to Industry

E-commerce
E-commerce companies rely on open and click metrics to accurately predict and plan marketing initiatives and campaigns. Automated or anti-spam filter clicks and opens of a message can trigger marketing automations and follow-up emails. Not having accurate data can reduce ROI and return on advertising spend, because metrics are no longer reliable enough to drive business decisions. While the impact on revenue is less direct, the opportunity cost can be significant.

Media and Content Marketing
Media companies and content marketers are affected more directly by nonhuman reactions because email clicks or site visits are often a direct conversion metric in these industries. Many media and content-centric companies base their sales strategies on guaranteed clicks, opens or article views, which can no longer be relied upon as metrics.

This can lead to direct reduction in advertiser or subscription revenue and threaten marketing revenue that is based on lead generation strategies. M³AAWG advises senders to strengthen security measures such as form and email verification to ensure the highest possible quality of their lists.

3.2 Impact of Email Reputation on Brands and ESPs

As a sender's ability to use engagement indicators is reduced, their campaign performance can deteriorate over time. Engagement-based segmentation and recipient sunsetting can become increasingly difficult and reduce list quality over time. This in turn can have an impact on the overall sender's domain reputation due to lower engagement. This may also impact ESPs who host click tracking links on their own domains.

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3.3 List Hygiene and Recipient Impact

List hygiene recommendations include suggestions for re-engagement series to be sent to subscribers with declining or lapsed engagement, or automatic removal of unengaged subscribers at an ongoing cadence. The possibility of NHI causing a false positive assessment of a recipient's engagement requires a more complex approach to measuring engagement. Common recommendations for list cleaning based on last activity could lead to keeping lists populated by addresses that were "active" because of NHI.

NHI may trigger actions which the intended recipient or subscriber was not aware of and did not consent to. These may include (but are not limited to) double or confirmed opt-in, confirming details, adding to a new mailing list, removal from a current mailing list, or triggering interest in items recipients are not interested in. These can all lead to additional, unwanted mail being sent to the recipient which in turn may drive abuse complaints and hurt the brand's reputation with the end user.

4. Best Practices

During the research the following best practices were found to reduce the amount of NHI. Correlating factors identified through internal research are:

- Use HTTPS exclusively for all links. Emails with a mix of secure and non-secure tracking links appear to be disproportionately targeted. This mixed link usage—e.g., a non-secure HTTP link directing to an advertiser from a HTTPS tracking link—seems to trigger the most unwanted behavior.
- Distinguish between and maintain separate campaigns for confirmed engaged and non-engaged recipients, especially when inbox placement at certain domains is an issue.
- Monitor content. Content quality plays a big role— not only at the link level, but also image to text ratio and other factors. "Aggressive" email marketing (using emoticons in subject lines, large catch words, and the like) tends to lead to higher amounts of NHI.
- Sender reputation plays a significant role in the amount of NHI. The amount of NHI for senders with highly engaged recipients is considerably lower.

In addition to these specific measures, following the guidelines laid out in [M³ AAWG Sender Best Common Practices](#) will help improve email deliverability and engagement.

The guidelines in [M³AAWG Email Authentication Recommended Best Practices](#) allow mailbox providers to properly attach reputation to a sender brand.

Following email content best practices can reduce the impact of NHI.

5. Conclusions

There is no definitive guide to mitigating this problem. The data presented in this document do not cover 100% of NHI, but only interactions that could be identified as such. While a number of signals can help identify these NHI, there is currently no definitive way to accurately remove them without adverse effects.

Technologies used by most ISPs and the variety of security and anti-spam products used by corporate mail servers to identify email abuse are very sophisticated. Rather than crawling all messages and their links, these systems use simulated behavior designed to be indistinguishable from natural human interactions.

Identification of such interactions is already very difficult to detect and will become nearly impossible in the future.

The most important takeaway is that NHI has measurable and significant consequences, and senders looking at their metrics should be aware of them. In the presence of these interactions, senders may need to re-evaluate their use of engagement data when determining mailing frequency or segmentation. Removing NHI will change the numbers, but senders can never be 100% sure they have accounted for all of it, and the effort may not be worth it. Furthermore, if all ESPs start doing this (and doing it differently) for their customers, the value of the metrics will degrade still further.

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