# IT@INTEL

# Preventing Spam on Intel Public Community Forums

After we deployed the solution as a production pilot, spam instantly decreased to pre-escalation levels, saving Intel a significant amount of money per week.

**Gary Lutz**
Sales and Marketing Information
Technology, Intel IT

## Executive Overview

Intel uses online community forums to engage publicly with customers, developers, and industry experts. These forums foster discussions that often lead to industry-wide solutions. Unfortunately, they also attract spam.

In spring 2015 Intel experienced a significant escalation in spam attacks on its public community forums—as many as 10,000 unwanted posts per day. To preserve the integrity of the community, Intel employees and volunteer moderators had to divert time from other business-critical activities to manage and prevent spam.

The negative impact of this spam was far-reaching:

- **Brand image.** Irrelevant and otherwise inappropriate content degraded the user experience, making it more difficult for people to find relevant information in our forums and projecting a poor brand image.

- **Moderator focus.** Volunteer moderators had to spend time cleaning up spam instead of helping community members.

- **Expense.** During periods of peak spam activity, Intel spent a significant amount of money per week managing and deleting spam.

Intel needed a rapid and less labor-intensive solution. After identifying a third-party spam-filtering service, we worked with a third-party developer to create a custom plug-in to connect the service to our community forum platform. Within one month we deployed the solution as a production pilot, and spam instantly decreased to pre-escalation levels.

Today, our spam-filtering service posts appropriate content to the forums immediately while deflecting known spam and flagging suspicious content for moderation. The volume of attacks stays low because the spam-filtering service learns from its global customers, detecting new messages that resemble previously identified spam.

We have made incremental enhancements to the spam filter since the launch. This automated solution has enabled our employees and volunteer

## Contents

## Contributors

**Mark Hanna**
Support Communities Manager,
Intel Customer Support

**Mike Armstrong**
Digital Marketing Manager,
Intel Digital Marketing and Media

moderators to focus on the community, protecting the user experience and Intel's brand while saving Intel both time and money by having to manage the spam manually.

# Business Challenge

Intel's public community forums are an important asset, enabling customers, developers, and industry experts to share ideas about common challenges. Unfortunately, spammers sometimes join the conversations, adding unwanted messages to the discussions. Early in 2015, spam attacks escalated, culminating in up to 10,000 unwanted posts per day.

Intel is not alone in its battle with spam on public community forums. Spammers often target large organizations because they invest heavily in search engine optimization to make their content easy to find. Because content on community forums is optimized for searching, spammers post messages there to draw attention to their own content.

Spam comes from both humans and robots. Spam coders generally begin by looking for opportunities to post advertisements to highly optimized sites like the Intel community forums. When they find an entry point, such as the ability to add comments to posts in the forums, they create robots to automatically comment on as many posts as possible. The result may be tens of thousands of unwanted posts linking to products, services, and other kinds of material unrelated to the original topic.

Intel community forums are managed by Intel employees as well as volunteer moderators who are enthusiastic about the brand and highly engaged in the discussions. At Intel, we found that not only were we spending significant time and money per week cleaning up spam, but our volunteer moderators were also spending hours on this task every week. These volunteers are often our best brand advocates; we wanted them to remain focused on assisting others and contributing to the discussions.

The problem of spam went beyond the monetary cost associated with continuously cleaning it up. The impact to Intel's brand image was high as well. The community forums are an important part of Intel's public persona, so every encounter with spam was lending a poor impression of the products and the corporation as a whole. The presence of spam also diminished users' ability to find relevant information.

Clearly, managing spam manually was not as effective as it needed to be, and the ongoing cost was too high. There was no end in sight to the continuous spam attacks; we needed an automated solution.

Share:

# Solution

In researching ways to prevent spam from getting into our community forums, we looked first at the way cloud-based email suppliers had managed spam. Spam-filtering tools for email have matured significantly over the past decade, now largely keeping spam out of the inbox. We had hoped to find a supplier whose solution would work in our forums.

Unfortunately, we found few tools designed specifically for public forums. Those that we did find, while they demonstrated promise, were not compatible with our social media platform. After initial discussions with our community forums solution supplier and others, we realized that, to address the problem rapidly, we needed to develop our own solution.

In April 2015 Intel IT's Digital Business Experience Social Collaboration team, along with other internal business units, led an effort to identify an industry-leading spam-filtering service. Then, we developed a plug-in to integrate this service into our platform. Our decision was based on the spam-filtering service's approach to monitoring the digital experience:

- **Machine learning.** Using sophisticated machine-learning techniques, the spam-filtering service blocks unwanted and malicious content automatically. It uses a reputation-based system to monitor user profiles and discern the likelihood of a given individual submitting spam.

- **Multilingual analysis.** Using text analytics, the spam filter detects harmful content, such as profanity and other spam-related content, in 75 languages.

Because the spam filter with the most promise was not compatible with the community forums platform we use, we had to consider developing our own custom plug-in to connect the two systems. To prove the filter's effectiveness before committing to it, with the supplier's agreement, we used an initial 30-day free trial and hired a third-party developer knowledgeable in community forums to build a plug-in to connect the filter to our social media platform.

To minimize the ongoing impact of spam, we wanted to build and test our solution quickly. We aimed to have the new spam-prevention plug-in working within one month from selecting the tool.

Given our pressing need, and the absence of spam in a protected test environment, we moved to a production pilot with our initial solution to test it. We saw immediate results. Our daily spam incidents dropped to the pre-onslaught levels. Building on this initial success, we made incremental changes to fine-tune the solution, such as improving the administrative functions. We ultimately decided to license the tool at the end of the trial period.

Of course spam attacks continued after we put the filter in place; nothing stops spam completely. Fortunately, the spam-filtering service learns from its global implementations, so the volume of attacks remains low.

## Engaged Community Members Help Fight Spam

Intel's community forums often include volunteer moderators who are experts in the forum topics and who assist others by answering questions and posting documents of general interest. Many of our community members look to these moderators as leaders and advisors in the field.

A volunteer moderator in Intel's Chipsets forum, characterized the problem caused by spam attacks this way: "Spammers flood the forum with hundreds of posts. When the support community is spammed, it is far more difficult for users who need support, having to wade through hundreds of spam posts, to find an answer or have their posts seen by others who might be able to provide support."

During the peak of the spam attacks, volunteers spent hours every week disabling spam accounts and flagging spam posts for moderation. Spam was reducing the visibility of relevant content and hurting the entire community. During this time, moderators had less time to help others, reducing the community's effectiveness.

With successful spam prevention, these volunteers have been able to return to their roles as experts and advisers.

> With successful spam prevention, these volunteers have been able to return to their roles as experts and advisers.

The spam filter monitors all incoming content on the forums and categorizes it into three types:

- **Known spam.** The filter deflects known spam, preventing most spam from ever appearing in the forums.

- **Suspected spam.** The filter flags suspicious content for moderation, preventing that content from going public before the moderator reviews it.

- **Acceptable content.** The filter enables unsuspicious content to be posted directly to the forum without moderation.

With this approach, we were confident that the entire solution—spam filter and plug-in—would prevent a significant amount of spam from appearing on the community forums.

## Results

The spam-filter pilot launched in May 2015, just one month after Intel began experiencing high volumes of spam on the community forums. We saw an immediate drop in spam—back to the original volumes—as shown in Figure 1.

We experienced additional spikes in spam after the production pilot, which is consistent with the nature of spam attacks. Spammers manually seek opportunities in their targets, and when they find one, they develop robots to post as much content as possible. It has taken several iterations for our spam filter to address the most vulnerable areas of the community forums. Each attack adds data to the service's learning knowledge base, which prevents similar spam in the future.

As spammers become more sophisticated, the cost of manual intervention continues to rise. Without the spam filter, we estimate that we would continue to spend both significant time and money per week to delete spam manually. The spam filter we implemented is helping us to avoid these escalating costs as well as protect our communities, the user experience, and the Intel brand.
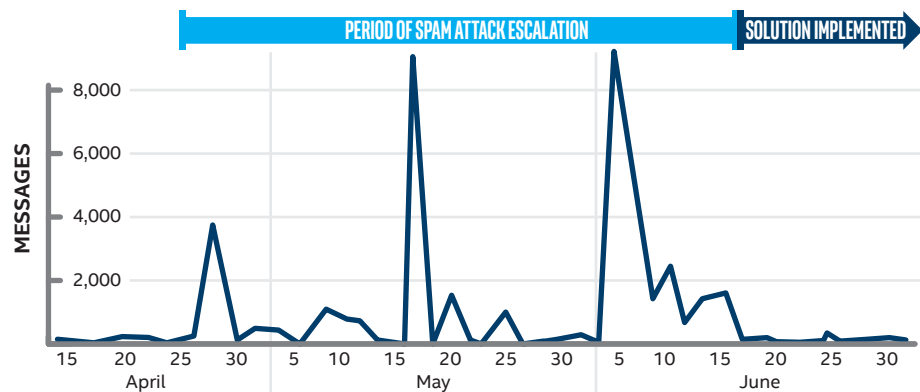


Figure 1. Spam attacks on Intel public community forums escalated during April and May 2015, twice spiking at nearly 10,000 posts per day. Attacks dropped off immediately after we implemented the spam-filtering solution in June, and spam levels have remained manageable since then. Spikes have all but disappeared thanks to the spam-filtering service's ability to learn.

# Conclusion

Working with other Intel organizations, Intel IT rapidly developed an automated spam-filtering solution to deflect spam attacks on its community forums, attacks that had escalated suddenly and required fast response. Through its learning function, the spam-filtering service gets better at recognizing spam and deflecting it automatically, minimizing the need for human intervention.

The benefits of this solution include:

- **Cost deflection.** The automated spam filter saves significant time and money each month by eliminating manual spam management—and the cost and effort would have grown without adequate filtering.

- **Brand protection.** By removing irrelevant and otherwise inappropriate content on Intel's forums, we have prevented damage to the company's brand and product reputation.

- **User experience.** We have made relevant content easier to find, improving the user experience. Community members can now more easily focus on the topics and discussions.

- **Volunteer effectiveness.** The time that our volunteer moderators spent managing spam was time that they were not available to assist other community members. With the automated spam filter in place, those volunteers can focus on enriching the community experience.

Our rapid launch of the spam-filtering solution and its immediate success have drawn interest from other business units within Intel. We are working with these groups to help them avoid the cost of spam and realize the benefits of the solution.

For more information on Intel IT best practices, visit **www.intel.com/IT.**

Receive objective and personalized advice from unbiased professionals at **advisors.intel.com**. Fill out a simple form and one of our experienced experts will contact you within 5 business days.

## IT@Intel

We connect IT professionals with their IT peers inside Intel. Our IT department solves some of today's most demanding and complex technology issues, and we want to share these lessons directly with our fellow IT professionals in an open peer-to-peer forum.

Our goal is simple: improve efficiency throughout the organization and enhance the business value of IT investments.

Follow us and join the conversation:
- Twitter
- #IntelIT
- LinkedIn
- IT Center Community

Visit us today at **intel.com/IT** or contact your local Intel representative if you would like to learn more.

## Related Content

Visit **intel.com/IT** to find content on related topics:
- Integrated Collaboration for the Enterprise paper
- Aligning Social Collaboration with Business Objectives paper
- Transforming Sales Productivity with Social Collaboration paper