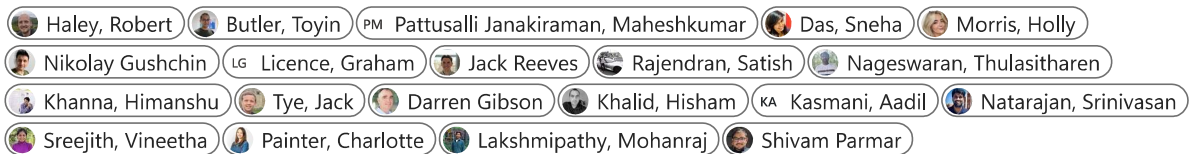ⓒ Add icon   🖼 Add cover

PIR - Inaccurate search results on Product Listing Pages (PLPs) and Search Results Pages (SRPs) across all channels, including the UK and ROI

M&S Digital&Tech *Post Incident Review*

📌

Incident Ref: 90704278

Incident Date: 🗓 Thu, Apr 3, 2025

PIR Date: 🗓 Thu, Apr 3, 2025

Author: 👤 Priyabrata Sahu

Attendees:

👤 Haley, Robert   👤 Butler, Toyin   ᴾᴹ Pattusalli Janakiraman, Maheshkumar   👤 Das, Sneha   👤 Morris, Holly
👤 Nikolay Gushchin   ᴸᴳ Licence, Graham   👤 Jack Reeves   👤 Rajendran, Satish   👤 Nageswaran, Thulasitharen
👤 Khanna, Himanshu   👤 Tye, Jack   👤 Darren Gibson   👤 Khalid, Hisham   ᴷᴬ Kasmani, Aadil   👤 Natarajan, Srinivasan
👤 Sreejith, Vineetha   👤 Painter, Charlotte   👤 Lakshmipathy, Mohanraj   👤 Shivam Parmar

Technical Owner: 👤 **Haley, Robert**

👉 *Analyses the root cause and provide technical recommendations to prevent incident recurrence.*

👉 *Develop and oversee the implementation of an action plan to address the root causes.*

👉 *Work closely with cross-functional teams to gather information and insights.*

PIR Reviewer: 👤 Butler, Toyin

👉 *Validates the root cause analysis, corrective actions, and preventive measures before signing off, ensuring alignment with business and operational standards.*

1. Incident Summary :

👉 *Provide a concise overview of the incident with brief update on issue, impact, root cause and resolution.*

Customers seeing incorrect search results across UK, ROU

Business colleagues have reported discrepancies in search results on the website across all channels in the UK and ROI between 05:21 and 09:28, leading to a subpar customer experience. Despite this issue, there was no noticeable decline in orders. The underlying cause has been traced back to a human error made while modifying a global configuration rule within the Merch Hub application. This error has since been corrected to restore services.

A global "**Include Only**" rule was inadvertently implemented in Merch Hub, the M&S internal application, by the business to filter products where the brand was GOLA. This rule functioned as intended, restricting all search results and product listing pages (PLPs) to display only Gola products. It appears this action was part of a strategy to enhance Gola's visibility across all PLPs and search results pages (SRPs), like past practices during product launches. This feature was adapted from Bloomreach, the previous

search platform. As a result, searches for shoes yielded only Gola products, and queries specifically for Gola returned relevant results, while no results were available for any other search terms.

2. Incident Chronology:

👉 *Include a record of the data/time of key events. e.g. "07:36 Incident started, notified by …"* **keep fact based"**.

📅 Thu, Apr 3, 2025

05:20 - A change in the original global ruleset led to a surge in zero results.

06:05 - An operations colleague raised a post regarding the issue: [Radhakrishanan, Rajkumar: Products not showing in Mobile app](#).

06:28 - Issues identified:

- An error page appears when searching for any stroke.
- Mobile app products are not visible on PLPs.

06:41 - The issue was communicated to the Tech Service Manager via the Teams channel, and the Service Manager engaged. A Remedy Incident was raised: **INC000090704278**.

06:45 - Another global ruleset change was applied, restoring service.

06:50 - Search issues related to the stroke keyword on the website were resolved for some PLPs.

06:55 - PLPs are visible on the apps, although not for all departments.

06:57 - The Mobile Apps team confirmed that all PLP responses were successfully received, but the search services returned an empty list.

06:58 - Android is still experiencing delays, with no items appearing on some PLPs.

06:59 - The Service Manager classified this as a High Severity incident based on the impact and ongoing investigation.

07:00 - A Pager Duty Incident was raised with the search team. No errors were noted, but there was a significant reduction in response times during the issue period.

07:04 - The issue impacted only the apps (not the web), and there was no effect on orders. The search services were causing browsing difficulties.

07:15 - Incident triage was moved to the D&T Incident channel: [Priyabrata Sahu: 0 Items showing on Mobile Apps PLPs (Search results returning empty….](#).

07:16 - The search team confirmed an unusual drop in response times for PLPs from 05:21 to 06:45. ## Screenshot below.

07:18 - Although the apps were receiving timely responses, there were zero hits. No timeouts or related issues were detected.

07:45 - A global ruleset change re-applied the erroneous inclusion rule of brand=Gola.

07:53 - The Elastic app is being restarted.

08:00 - An attempt to restart the primary region of the search service application had no effect.

08:01 - A sanity check was performed on iOS, revealing that all categories at the top of the home page, which receive the most traffic, were non-functional. Our Top Picks, Shop Girls, and Shop Boys categories were all displaying zero items.

08:25 - Smoke tests for the search service were conducted in the DR region to determine if the issue was localized; the tests failed.

08:26 - The WCS team confirmed that order statistics for the last three days showed no indication of order drops.

08:38 - Debug logging for the search application was enabled in production.

08:46 - The offending rule was identified and removed from the global ruleset, restoring the search service.

09:10 - Debug logging switched off once search core services started working

09:15 - The Akamai cache for the search service was cleared, restoring functionality to mobile apps.

09:19 - PLP web cache process triggered

09:29 - The cache for web PLP and SRP was cleared, and service was fully restored

3. Incident Resolution

👉 *The actions taken to restore services and mitigate impact.*

Fix details

The global configuration has been successfully updated with accurate information. After identifying the root cause, the problematic rule was removed, and the caches in both Apigee and Akamai were refreshed. This action resolved the issue across all platforms.

4. Root Cause

👉 Refers to the fundamental reason (s) why an incident occurred including problem description, analysis techniques, contributing factors, evidence with concise root cause statements

A global "**Include Only**" rule was inadvertently implemented in Merch Hub by the business, which restricted the visibility of products to only those associated with the brand GOLA. This rule functioned as intended, applying a filter across all search results and product listing pages (PLPs) to exclusively display GOLA products.

👉 Refer to the key insights and conclusions drawn from the incident analysis - what went well/what went wrong highlighting gaps, failures, or inefficiencies.

5.1. Observability –

👉 Evaluating monitoring, logging, and alerting effectiveness in detecting the incident.

- This highlighted that the search team was missing alerts related to a rate of zero results in searches
- The elastic monitoring cluster reported a reduced search rate during the issue period, leading us to mistakenly suspect that searches were not reaching Elastic Search. However, it turned out that searches were indeed reaching Elastic Search correctly. It appears that this metric is an internal one that can be influenced by the number of results returned in a search
- Queries sent to Elastic Search are only visible in New Relic when debug logging is enabled

5.2. Technical Challenges -

👉 Identifying system, infrastructure, or architectural issues that complicated resolution.

Getting the right contact information for Apigee and Akamai cache clear took longer than expected

5.3. MIM involvement & impact assessment -

👉 Timely engagement of MIM and analysing the impact on business operations based on top 10 business processes

Gap in impact assessment.

Service Management team to review documentation on engaging with team via TechOps & Incident channels. (Updated on this section - *Technical Details and Useful Documents*)

5.4. Incident handling/ stakeholder management –

👉 Reviewing how teams collaborated to drive the incident to resolution and engaged with key stakeholders.

Incident bridge started with initial triage performed

5.5. Business Communication –

👉 Clear, concise & timely communication to stakeholders, focusing on business impact and recovery actions.

Incident communications were shared with Sev-1 stakeholders. The delay in disseminating these communications highlights the necessity for an improved impact framework and a more effective incident communications process.

5.6. Supplier Engagement –

👉 Assessing the responsiveness and support provided by external vendors and internal product teams.

There was no supplier engaged for this incident

Mitigation Actions:

👉 Agree actions for each of the findings to prevent recurrence, strengthen system reliability & stability, and improve response efficiency for future incidents

Action	Owner	Due Date	Remarks	Action Category
1 • To create an alert for top categories that return zero search results, it is essential to collaborate with the Apps team. This collaboration will help identify the most frequently used categories and any specific categories of interest. • Please update the Search service runbook to include the procedure to be followed when this alert is triggered, as well as the recovery steps.	Butler, Toyin	Thu, Apr 10, 2025	Results in search and there are certain categories that should never return 0. So that's something that we are going to implement	Problem Identification & Alerting
2 A feature is needed in Merch Hub to indicate the rule audit changes captured in the Search Service. This information should also be accessible in New Relic or a similar APM tool to help narrow down the changes effectively.	Jack Reeves	Fri, Apr 18, 2025	Currently there is no functionality available to have a historical log of changes in the merchandising hub when changes are made.	Problem Identification & Alerting

| 3 | To enhance customer experience, it is essential to establish alert conditions for instances where PLP items yield zero results from the Search Response API. This process should ensure traceability of search requests, allowing for seamless data flow from Mobile Apps to Elastic and the accurate transfer of relevant data back to the users. | Matthew Magee | Fri, Apr 11, 2025 | Matt will assess the feasibility of implementing customer experience alerts. Rob can help on the Front end experience on how to define result responses and contract | Problem Identification & Alerting |
| 4 | Consider implementing an enhanced debugging approach for search requests originating from various channels, particularly those that follow specific category patterns or involve a limited number of requests. This strategy will facilitate quicker issue identification for teams, streamlining the troubleshooting process. | Haley 'Robert | Fri, Apr 11, 2025 | | Problem Identification & Alerting |

| 5 | Amending the existing runbook on the contacts, procedures for clearing the web, SRP. This update aims to eliminate any confusion regarding which cache needs to be cleared to restore customer experience effective. | Butler, Toyin | Fri, Apr 11, 2025 | Similar like web pipeline. Considering search service reaching out to Akamai, Web graphQL mesh, apigee, Akamai service. | Solution & Recovery |

| 5 | Amending the existing runbook on the contacts, procedures for clearing the web, SRP. This update aims to eliminate any confusion regarding which cache needs to be cleared to restore customer experience effective. | Butler, Toyin | Fri, Apr 11, 2025 | | |

6	The incident severity could have been classified as Sev-1 right from the start, especially when there were zero items returned for all Apps PLPs. However, we lacked clear metrics and observability, which hindered our ability to assess whether this issue affected all traffic during the early morning hours.	Priya brata Sahu		Informational, no actions required. The team was on the incident bridge to investigate the cause of the initial service recovery, which was unusual since the services restored themselves. Despite this, communication remained a high priority.	Impact assessment
7	Conduct a refresher training with Merch Hub users on global rules. Looking at today's incident it was clear that making changes to global rules can damage website availability, customer experience.	Das, Sneha	Wed, Apr 16, 2025		Problem Avoidance
8	Implement a feature that notifies users when they are making, modifying, or adding changes to global rules. This UI alert should include a warning message outlining the potential implications of the changes on the website	Morris, Holly	Wed, Apr 16, 2025		Problem Avoidance

#					
9	Global rule changes should implement a structured role-based (access control authorization) workflow to effectively manage any amendments. This approach will enhance the strategic understanding of any gaps that may exist.	Das, Sneha	Fri, Apr 18, 2025	All global rule functions had been migrated from BR to Merch Hub as-it-is. What is the purpose of using global rule functions and impact to wider website?	Permanent fix
10	Conduct a discovery workshop focused on the upcoming Product Launch and the features of Campaign Launch within Merch Hub. We will explore how to optimize product data usage for enhanced control and effectiveness.	Morris, Holly	Fri, Apr 18, 2025	Discussion with Business Stakeholders (Charlotte, Himanshu) on use cases of new product launch	Permanent fix
11	It is essential to evaluate all current features of MerchHub, many of which are derived from Bloomreach. These features pose significant risks to the business, affect customer experience, and influence trade, particularly in cases like the Global rule. Additionally, it is crucial to map out user actions within the Hub to understand any broader implications that may arise.	Das, Sneha	Wed, Apr 23, 2025		Permanent fix
12	Address the fuzzy search behavior which was returning incorrect/unrelated search results during the incident	Haley, Robert	Wed, Apr 16, 2025		Problem Avoidance

13						

Please refer to 📗 Major_ Significant and Key Incident Tracker v1.0.xlsx **for progress updates on Mitigations**

Technical Details and Useful Documents:

### What's the purpose of using Incident Channel? [Link](#)

Reporting of all Severity-1 or Severity-2 incidents impacting technology

Purpose: This channel is dedicated to posting and tracking Significant Incidents or higher within our organisation. It serves as a central hub for real-time updates, impact assessments, and resolution steps for incidents that significantly affect our operations, customers, or services.

When should team use TechOps Channel? [Link](#)

When severity is not clear or when business teams report an issue that requires addressing by technology.
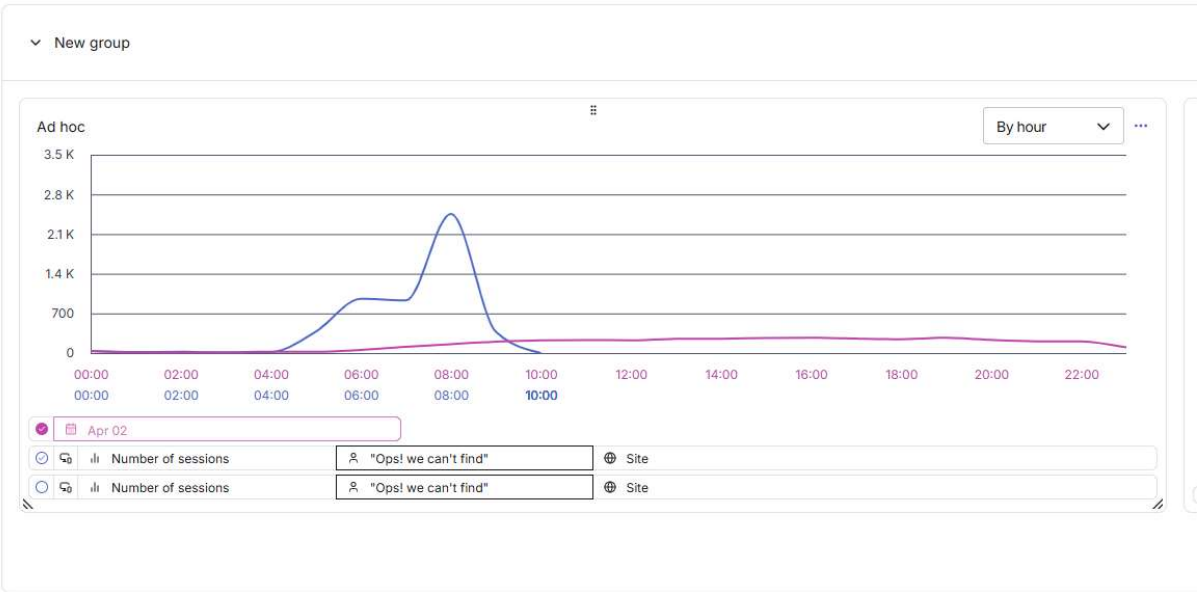
Purpose: To discuss any operational issue in the production environment that requires investigation.
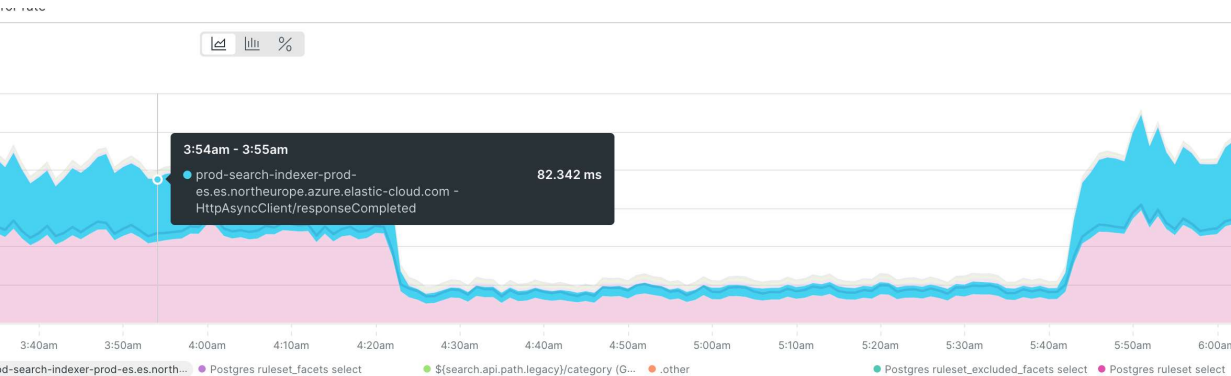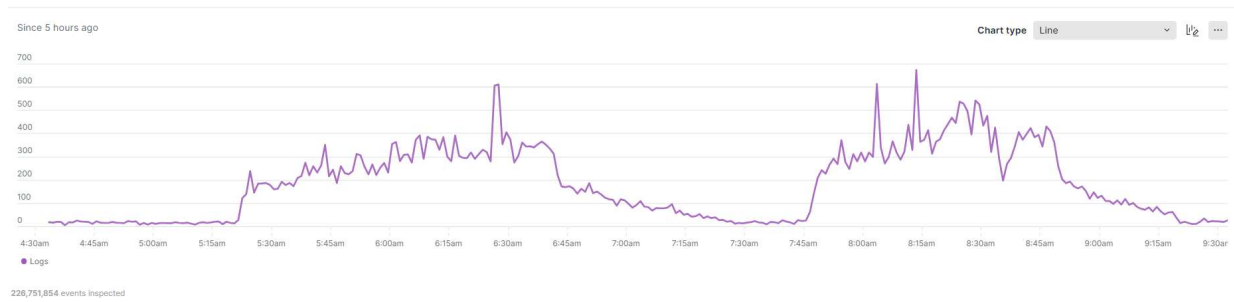

Order Drop comparison across other days

Order count from 5 AM to 8:15 AM			
Channels	1st April	2nd April	3rd April
IOS App	3154	3656	3048
mweb	2113	2313	2139
Andriod App	801	968	750

Could not find product trend

https://onenr.io/0VRVBOLz1Ra

Incident Comms

Date: 03/04/2025

Ref: INC000090704278

Incident Start Time: 05:21

Service Restored Time: 09:28

Incident Close Time:

Total Incident Time: 4 hours 7 mins

Incident Owner: Priyabrata Sahu

Issue

Wrong search results returned on all channels impacted including UK & ROI; 0 items displayed on all PLPs in Mobile Apps

Impact

Poor customer experience

Not visible order drop

Recovery Actions

Seach services were restored by itself without any action

Root cause is still unknown, team are looking for more details

07:50

Search service response issue has been incorrect, search results are sending incorrect data

Team are still looking into the issue for Application and Infra side

09:00

The search results for the Foods catalogue are functioning correctly; however, the C&H search items are either yielding no results or returning incorrect data

To address this issue, the search service application has been restarted to eliminate any potential problems

Services are getting restored once the global search results configuration reverted to return actual results

App, Web cache clear will be performed to restore customer experience

10:00

All applications and web caches have been cleared, which has successfully restored the search results, product listing pages, and all browsing pages for an enhanced customer experience.

Search results are now functioning properly

Detailed PIR to improve service restoration process

Next Update

No further updates