



POST OFFICE LIMITED Board REPORT

Title:	Horizon Issues Judgment (HIJ) Phase 3 Remediation update	Meeting Date:	17 January 2024
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Input Sought: Noting

Executive Summary

This paper reiterates the focus and approach taken to remediation of the findings of the Horizon Issues Judgement (HIJ). An update is provided against the five themes set out in the January 2023 paper to provide the Board with a view on progress.

The current programme will close upon the completion of the Phase 3 scope. Additional activity will be taken forward either through specific individual projects or via the Technology business as usual function.

The work has been ongoing since late 2020, with a total expected cost of £26.2m by end of 2023. Two of the five HIJ themes are expected to be fully addressed before Phases 6 and 7 of the Inquiry in 2024.

The remaining areas – management of core Horizon data, management of discrepancies and shortfalls and the reliance on Fujitsu to identify defects and the causes of shortfalls in branch accounts- require additional efforts. This is to ensure we have addressed criticisms in the Judgement to the fullest extent possible (within the confines of the legacy platform and operational constraints).

The status of our remediation against the five themes is set out below.

THEME:	Remediation Status	Ongoing Actions
Management of <u>Horizon Defects</u>	Activities complete and sustained in BAU	N/A
Management of <u>Core Horizon Data</u> (incl. Reference and Third-Party)	In progress	1.Completion of Audit SAN project 2.Horizon System Improvements
Management of Privileged and <u>Remote Access</u> to Branch Accounts	Activities complete and sustained in BAU	N/A
Management of <u>Discrepancies and Shortfalls</u>	In progress	1.BSC call trend analysis 2.Horizon System improvements
<u>Reliance on Fujitsu</u> to Identify Defects and Causes of Shortfalls in Branch Accounts	In progress	1.Horizon event log extraction and retrieval



Against the broader, 'fit-for-purpose' question, based on the high level of transaction volumes, and very low level of system downtime there is evidence that the system itself is reasonably robust. Albeit, there are no established industry metrics to measure against.

The last phase of the ongoing Horizon Remediation Programme has further reinforced that conclusion by implementing tactical 'fixes' and addressing, to the extent feasible, the previously unaddressed areas of Data Management. These include Reference Data, AP-ADC script controls and the creation of modern data audit capabilities (Audit SAN).

Report

1. What are the findings in the Horizon Issues Judgment (HIJ)?

The Horizon Issues Judgment (HIJ) is comprised of 15 specific findings, enumerated by the Judge in his verdict. These represent "findings of fact" about how the Horizon system operated at the time, with a specific focus on the generation, detection and management of discrepancies and shortfalls in Postmaster's branch accounts.

Appendix A presents the 15 findings, which can be grouped into 5 themes. Given findings are interlinked inside a theme, each theme must be addressed collectively:

THEME:	FINDINGS #:
Management of <u>Horizon Defects</u>	1, 2, 3
Management of <u>Core Horizon Data</u> (incl. Reference and Third-Party)	4, 5, 6
Management of Privileged and <u>Remote Access</u> to Branch Accounts	7, 10, 11, 12, 13
Management of <u>Discrepancies and Shortfalls</u>	9, 14, 15
<u>Reliance on Fujitsu</u> to Identify Defects and Causes of Shortfalls in Branch Accounts	8



2. What has Post Office's strategy been to address the HIJ findings?

Although there is no requirement and prescribed test for "legal compliance" or "legal conformance" with the HIJ findings, the focus of Post Office's effort has still been on ensuring the five themes and all 15 findings are addressed. To that end, POL set out a dedicated Programme, which launched in 2020.

The third phase of this Programme is now nearing completion, (the initial Phase Zero of the programme delivered a number of diagnostic reports) and has delivered a significant number of Horizon System Improvements and other changes to strengthen the overall management of the platform. A summary of these deliverables is shown in Appendix [B]. The final deliverable (an audit of our incident management processes as they relate to Horizon) will be completed by the end of February.

As the main Programme closes we will transition any remaining activities to the business as usual (BAU) Technology function and continue to invest where appropriate to deliver a small number of Horizon system improvements, this will be done mindful of the need to provide a stable functional baseline for NBIT. This reflects our intention to sustain the changes already made via the Remediation Programme whilst improving Horizon in order to ensure we provide a system that is fit for purpose.

3. What is the current remediation status for the five HIJ themes?

We have made substantial progress against all five themes and whilst additional activities remain in three of the themes, we have put in place significant changes across all five. The key themes of Defect Management & the management of Privileged/Remote access have been remediated to their fullest extent and now actively managed by the BAU Horizon and cyber functions.

3.1 Management of Horizon Defects

The HIJ found that bugs, errors or defects had the potential to, and did, cause apparent or alleged discrepancies or shortfalls relating to Postmasters' branch accounts or transactions. Bugs, errors or defects therefore undermined the reliability of Horizon to accurately process and record transactions.

Our activities in this area give us confidence that we have remediated the concerns raised by the judgement and we have implemented a number of significant changes:

- All 62 historical defects referenced in the HIJ have been fully re-tested to ensure they are not present in the current version of Horizon. The results of this testing have been independently audited and the results shared with the National Federation of Sub Postmasters (NFSP).
- We have established robust governance to proactively track and resolve Horizon defects, with the process now led and owned by POL. This includes a level of transparency whereby we notify Postmasters and other stakeholders (including the NFSP) of any defect we identify, either through testing or via reported incidents. This revised process was independently assured by KPMG in Phase 1 of the Remediation Programme
- Robust and formal identification, categorisation and remediation testing processes have been established. These changes ensure POL is proactively identifying and resolving



Horizon defects at an early stage, thus reducing any impact on Postmaster branch operations. New testing identifies on average some 4 new defects each month before these reach the live Production environment. In an important step change, this activity is Post Office led, while historically Fujitsu had predominantly owned this activity.

- Our Monitoring Solution (detailed below) provides an independent view of Horizon health and enables us to proactively identify when system performance alters, potentially indicating the existence of a bug or issue.

3.2 Management of Core Horizon Data (incl. Reference and Third-Party)

The Judgement found that there was a material risk for errors in data recorded within Horizon to arise in (a) data entry (b) transfer or processing of data in Horizon in both the Legacy Horizon and HNG-X forms.

Whilst some work continues in this area, we have made substantial changes that remediate a number of the risks raised in this theme from the judgement:

- We have reviewed 147 Horizon Product journeys to identify where data entry (mis-keyed) could be a factor in causing discrepancies. From this analysis we have identified 380 areas where this is a possibility.
- These 380 pain points were then distilled down into 170 problem statements to be addressed (either through system changes, improved training, additional communications and so forth). These problem statements were reviewed by an Improvement Delivery Group (IDG) sub-group and the Horizon Design Review Forum (HDRF) in 2022. This resulted in a backlog of 39 potential system improvements being approved for more detailed analysis.

These system improvements were prioritised based on inputs from both Retail and Commercial teams, together with advice from Norton Rose Fulbright (NRF) on the risk of potential Postmaster detriment. This resulted in a selection of 11 system improvements for delivery in the final phase of the Remediation Programme. Given the revised NBIT timeline, work is now underway to revisit this original list and re-evaluate whether any of the original pain points should now be considered for inclusion in ongoing Horizon improvement activity.

The definition of the scope of system improvements was made after careful consideration from the different parts of the Post Office business. The decision reflects the application of four prioritisation factors:

- **Impact on Postmasters** – issues with significant Postmaster impact were prioritised for early resolution.
- **Value for money** – issues that are costly to resolve in Horizon were deprioritised unless they majorly impact Postmasters.
- **Minimal disruption to Postmasters** – issues, the resolution of which would likely temporarily disrupt the Postmaster operation, were deprioritised (e.g. user interface changes).



Ability to address via New Branch IT (NBIT) – issues that could be more effectively resolved via NBIT instead of on Horizon were deprioritised unless they significantly impacted Postmasters

In looking to address data transfer, POL's wider Technology transformation have implemented and continue to implement changes to how data is transferred from and to Horizon.

These include:

- The implementation of a Payment Card Industry (PCI) compliant Payment & Banking solution to better manage banking transactions.
- The procurement and implementation of a commercial off the shelf file transfer platform. We're now in the process of migrating our legacy file transfer routes to this solution and will be moving more than 300 file transfer routes that service more than 1000 individual file transfers across Horizon. This work will complete by October 2024
- The replacement of the reference data driven APOP voucher authorisation platform. This provides the ability to make pay outs to, for example, energy customers.

To mitigate risks around the use of Reference Data, we have additionally implemented changes to our processes & controls for managing this key aspect of the Horizon platform.

These include:

- Clear end to end Change Request processes for both Reference Data and AP-ADC changes. This is managed via Service Now with clear accountability for sign offs.
- Transparency of request visibility enabling assurance around changes.
- Automation and auditability improvements leveraging our service management tooling.

Whilst we have not carried out any specific testing of the replication and storage of data through the Horizon Remediation Programme, activities are underway which will provide additional confidence in this element of the platform.

These include the design and creation of a new Audit store for Horizon enabling the storage of audit data for all branch transactions to be within POL for the first time. This further means the process to retrieve Audit data (ARQ) will now be executed by POL (historically this has been wholly managed by Fujitsu).

3.3 Management of Privileged and Remote Access to Branch Accounts

The Judgement found that Fujitsu had the ability to insert, inject, edit or delete transaction data or data in branch accounts, implement fixes in Horizon to affect transaction data or data in branch accounts, or rebuild branch transaction data without the knowledge or consent of Postmasters.

It further found that permission controls upon the use of the remote access facility were considered inadequate. Whilst existing, the roles were very wide and not controlled, including but not limited to, the lack of any proper logs.

The activities and changes made relating to this theme give us a much greater oversight on the use of the functionality as well as greater level of transparency to Postmasters on the reasons for its use in their individual branches.



The following work has been completed in this area:

- Implemented a revised process for the use of Elevated/Privileged access with a greater emphasis on Postmaster communication (permission and explanation for use is sought/given in every instance).
- Implemented more robust and frequent Horizon Data Centre reporting via the Information Security Management Forum, the Technology Sub-Committee, GE and ultimately Board.
- Reduced the level of Privileged access at the counter for Fujitsu staff to the lowest possible level (effectively reducing the ability to amend data and provide read only access)
- Implemented over 200 IT controls into our Control framework (these are managed and audited via the ServiceNow enabled Controls process)

These activities have been independently assured via our audit partner to validate the effectiveness of our remediation approach.

3.4 Management of Discrepancies & Shortfalls

In this area, the Judgement found that Postmasters had limited access to reports and data, as well as a limited knowledge regarding POL's complex back-end systems. Therefore, Postmasters ability to investigate apparent or alleged branch shortfalls and discrepancies were equally limited.

Ultimately, Postmasters required the cooperation of POL to help investigate discrepancies, a theme that was also identified from the Common Issues Judgment (CIJ). The Judgement also found that a Postmaster could not dispute a discrepancy in their branch accounts, or any individual figure recorded in their branch accounts on Horizon. Horizon also did not have the capability for a Postmaster to record on Horizon that they had raised a dispute of this type.

In addition, POL did not have comprehensive records of where transaction corrections (TCs) had been challenged and the challenge upheld.

To address this finding, a number of activities have been undertaken to analyse the cause for issuing TCs over the last 3 years. As a result, there is now ongoing tracking and monitoring of the volume and cause of TCs issued as well as tracking of TCs that have been disputed.

- The implementation of the '*Review or Dispute*' button on Horizon has enabled Postmasters to dispute a discrepancy and have it investigated.
- The overall trend remains that the vast majority of TCs issued (78% in P8) are attributable to either cash handling errors (56%) and Lottery/Camelot (22%). We expect the removal of lottery products and the implementation of automated stock remittance to reduce/remove these TC volumes.
- This leaves a percentage that can be attributed to other errors, such as reconciliation errors and these are closely monitored.



- It should be noted that the number of TCs disputed through the Review and Dispute process is currently trending down (-26% between P7/P8). These volumes are monitored and reported monthly to GE/Board.
- We will be introducing additional steps to ensure that any report into the Branch Support Centre (BSC) of a discrepancy on Horizon is compared in more detail to known Horizon Defects and trend analysis carried out by the Horizon service team to identify potential defects.

Whilst we have made some changes to Horizon, with the implementation of a '*Review and Dispute*' button, owing to increased technical complexity and cost we have been unable to create the Branch Reporting Suite tool that was originally planned for Phase 3.

This additional Horizon functionality would have more fully addressed the findings of the Judgement (for example removing the need for the use of paper till rolls).

3.5 Reliance on Fujitsu to Identify Defects and Causes of Shortfalls in Branch Accounts

The Judgement found that POL had access to data and systems that were not available to Postmasters via a range of Horizon reports and POL's own management information systems.

The only source of actual key stroke information (which buttons had been pressed in branch) was found within Fujitsu audit data.

We have made good progress in remediating the findings in this area. As highlighted above, enhanced testing and Defect Management have reduced our dependency on Fujitsu and enabled POL to have a greater level of insight into defects.

In addition, following a successful pilot we have extended the use of the App Dynamics tooling to approximately 5,000 counters in the estate. This gives us a representative sample of the overall estate from which to derive appropriate alerting to more widespread issues. These deployments have provided POL with a range of capabilities including the ability to monitor network performance, transaction processing speed and the interactions between the counters in branch and the Horizon Data Centre.

This enhanced monitoring will provide us with foundational abilities to move into predictive monitoring and to address problems before they impact branches or potentially cause discrepancies.

We have additionally created a Proof of Concept that enables POL to extract the log files created at the counter. These files record interactions between elements of the counter (such as the keyboard or pin pad) and whilst these are not 'key logging' they do provide valuable insights into the potential causes of discrepancies. Additional work is required to make this Proof of Concept more readily usable to support our Investigation processes.

Financial Impact



The table below reflects the total estimated lifetime spend on the Horizon Remediation Programme and the expected further spend in calendar 2023.

Horizon Issues Judgement £'000	Actuals			Latest Forecast			3 Year Plan	Approved Drawdown
	FY20	FY21	FY22 P01 -P09	FY22 P10-P12	FY23	Total		
Phase 1	3,057	3,460				6,517	6,517	6,517
Phase 2		5,147				5,147	5,147	5,147
Phase 3			3,051	2,080	1,060	6,191	3,400	6,256
Phase 3 - Extended Scope					8,300	8,300		
Total HIJ Programme	3,057	8,607	3,051	2,080	9,360	26,155	15,064	17,920

Next Steps & Timelines

The current Remediation Programme will close at the end of Phase 3. The work on ARQ Audit SAN & Automated Stock Remittance will be managed via discrete projects.

Ongoing Horizon system improvements are being evaluated and further funding for these sought as appropriate.

Remaining activity will be taken forward either through specific individual projects or via the Technology business as usual function.



Appendix A – Horizon Issues Judgment findings

HIJ No	Summary
1	Defects caused apparent or alleged discrepancies or shortfalls relating to Sub PMs branch accounts or transactions
2	Sub PMs were not informed about identified defects. Some defects were not identified by automatic system check and as a result lay undiscovered for years.
3	Legacy Hz and HNG-X were not remotely robust as demonstrated by the number of defects found
4	Data errors arising from data entry, transfer or processing in both Legacy Hz and HNG-X led to financial discrepancies. Errors in reference data and 3 rd party data contributed to discrepancies in branch accts.
5	Transaction data reconciliation with 3 rd party data leading to manual corrective fixes and transactional corrections
6	Legacy Hz and HNG-X measures & controls did not prevent, identify or report or reduce a) data entry errors, b) data packet or sys level errors, c) software coding errors or bugs, d) transmission, replication & storage of transactional record data errors, e) data stored in the central data centre not being an accurate record of transactions entered on branch terminal
7	Remote access by POL and 3 rd parties
8	Availability of information to POL and reliance on 3 rd parties
9	PM access to information and transparency over the investigation process
10	FJ Access to and editing transactions / branch accounts for PMs
11	Permission Controls upon the use of the remote access facility were considered inadequate
12	How often was the remote and privileged access facility utilised by POL and FJ?
13	AppSupp privileged access rights were very wide and had the potential to affect the reliability of PM branch accounts
14	Ability for PM to dispute a discrepancy via Hz
15	Over 100,000 Transaction corrections issued since 2006; POL does not have comprehensive records on how many have been challenged. TAs used to correct branch accounts with no opportunity to challenge



Appendix B – 2023 Deliverables

Post Office Limited - Document Classification: INTERNAL

Horizon Remediation: What have we delivered during 2023?

A summary of Horizon improvements which have been rolled out across the network this year is provided below.

