

AI 298 - System stability

1. Dispute

Severity Assessment: Pathway: Low POCL: High
Rectification Plan: Not agreed

2. Description of Deficiency

Evidence from the live trial shows that the counter system is unstable and lacking the 'industrial strength' necessary for a production environment. This is evidenced by:

- unexplained system freezes,
- system freezes resulting from peripheral failure
- menu icons rendered unusable by having a 'barred' symbol applied against them.

The first two bullets above are exhibited to the user by either the system hanging or presenting a blank blue screen. Following a call to the Horizon System Help-desk the user is normally advised to re-boot the system. The Acceptance Incident was raised following a number of service incidents raised at the Horizon System Helpdesk.

Given that the severity of this incident can rightly be considered a factor of the rate of occurrence and that there had been some disagreement in the past between POCL and ICL Pathway regarding this rate of occurrence, ICL Pathway and POCL Business Service Management carried out a joint analysis on 13th August of calls made to the Horizon System Helpdesk where a system freeze resulted in an instruction from the HSH to reboot the system. This analysis covered the period from 29 July 1999 until 4 August 1999, however, week on week comparison indicates a similar rate of calls.

The size of the network is 324 offices.

Business Service Management's initial analysis identified 287 (DN Pathway dispute this figure and say it is 98 incidents - on-going work between POCL and Pathway to agree the size of the problem) incidents and clustered the reboots as follows:

- a) 66 incidents were clustered as printer/printing failures.
- b) 74 incidents were clustered as system freezes.
- c) 55 incidents were clustered as no entry sign on icons.
- d) 92 incidents were clustered as miscellaneous.

More detailed joint analysis on Friday 13 August is attached.

3. Business Impact

Every incident that results in a system freeze followed by rebooting the system will impact on customer waiting times as the counter will be out of action for approximately 40 minutes. There will also be a serious financial impact on POCL.
DN: Ruth to update with new analysis.

An estimate of outlet cost based on an analysis of HSH logs for week number is as follows:

- i) The HSH log indicates that 287 calls were received that resulted in a reboot being required due to icon based, printing related and other potential system stability issues.
- ii) POCL estimates that on average the duration of the incident at the outlet is 40 minutes to log the call with HSH, re-boot the system and recover transactions (1 and 2 position offices) undertaken in manual fall-back mode.
- iii) The incident frequency is projected as 287 reboots /323 outlets giving an incidence rate of 89%.

- iv) Assuming a steady state with 18,500 outlets the number of incidents per week would be 16,465, and 856,180 per annum.
- v) Applying the duration of service outage at 0.6667 hours and a cost of service at the counter of £22.80 per hour, the cost per annum is projected as £13,014,586.

Other impacts that have not been quantified here are:

- i) Extreme frustration and loss of confidence by sub-postmasters in the system.
- ii) Adverse impact on customers perception of the service
- iii) Increase in HSH and NBSC Helpdesk calls and cost to authorise the need to re-boot
- iv) Client SLA/confidence
- v) Risk of errors and impact on POCL Transaction Processing due to increased errors in fall-back
- vi) Severe disruption to POCL's critical operating process.

As these problems have yet to be resolved there is evidence that users are rebooting the system themselves without calling the Horizon System Helpdesk. This increases the risk that transaction would be lost impacting customers and clients and that unknown problems would identified by ICL Pathway.

4. Severity Rating

Pathway's Severity Rating: **LOW**

POCL's Severity Rating: **HIGH**

POCL assert that this Acceptance Incident is High because it clearly comes under the contractual definition of High "Failure to meet an Acceptance Criterion which would have a substantive impact on the service received by the customer". Pathway have advised that their understanding of the rate of occurrence constitutes a Low severity rating. However, the statistics on which this conclusion was based has now been proven to be incorrect. In fact, the rate of occurrence has now been shown to be 48 time greater than that on which ICL Pathway based their assessment. In comparing the performance of Horizon with that of POCL's legacy systems (ECCO and ALPS), it should be noted that the reboot rate per terminal for Horizon is 35% compared with ECCO at 0.30% and ALPS at 0.75%.

In summary therefore we must conclude that, given the current high level of occurrence, the associated impact on business activity and perception, the absence of any rigorous analysis of the cause or an acceptable rectification plan (see below), this incident is clearly of High severity.

5. Rectification Plan

Pathway has not yet provided POCL with the analysis of the causes of the system freezes and lock-ups. There is a known problem with the inter-operation between the printer and the application during balancing which can lead to the system freezing and this is being addressed. Pathway have presented statistics which suggest that the incidents of occurrence is reducing and are therefore proposing a passive approach based on ongoing analysis followed by a formal review after three months. This proposed approach is unacceptable to POCL for the following reasons:

- The rectification plan could result in the system being rolled out with all the current problems remaining unresolved.
- The current degradation of customer service and user perception is untenable in an operational environment larger than the current live trial.
- Pathway's severity is based on questionable evidence of the rate of occurrence which POCL believes is understated, has not been validated and is contradicts other evidence.

- The impact on the user, as estimated by Pathway, is based on the time taken to complete a reboot, however, the business impact is a measure of the full absence of service availability - the reboot activity is only a part of the problem life cycle and does not include the time taken to contact the helpdesk, explain the problem, discuss the activity leading up to the freeze, consider the solution by the help-desk and only then, the reboot.

Unfortunately the majority of the activity by Pathway to date has been attempting to deny that a substantial problem exists rather than solving the problem.

(DN - given that we rate this as High then the resulting action is predetermined - Pathway need to correct within the contractually allocated period. We don't to talk of this in Medium severity language.)

Annex.

Details of Joint Analysis of Fixes carried out 13th August

Printer/printing failures, these include:

• Final cash account print/rollover hangs	24
• unable to obtain receipt problem	4
• other printing issues	38

System freezes

Frozen screen	23
Blank screen	3
No entry icon*	5
No icons	9
Printing	16
Blue screen	2
Virtual memory	3
Lost card	2
Locked	2
Hardware	3
Dr Watson error	3
Stock Discrepancy	2
Logon	1

No entry sign on icons*. This is where there was a no entry sign on icons and which the advice given was to reboot.

Pathway Categories of System Stability Problems

- Frozen desktop after login
- desktop buttons no-entried so cannot exit screen
- final cash account print/rollover hangs
- screen frozen/navigation problems
- frozen screen
- virtual memory message
- slow machine syndrome
- "querying for logged users" problem
- suspense account report problems
- login/pressing F1 twice problem
- Dr Watson error during report print
- APS receipt problem
- User history report hanging
- run time error 91 on final cash account print
- AP number problem
- stock unit balance report hanging
- transaction log problems
- AP card swipe problem
- cheque listing problem
- declare cash freezing
- stuck on discrepancies screen while balancing
- "no declarations" problem during balancing
- declarations problem
- Giro print second page problem
- "unable to obtain receipt" problem
- Other print related issues

AI 376 - Lack of data integrity on the data stream(s) across the TIP interface**1. Dispute**

Severity Assessment: Pathway: LOW POCL: HIGH
Rectification Plan: Not agreed

2. Description of Deficiency

1. A number of incidents have occurred during Live Trial where transactional data captured at the outlet has not been passed to TIP in the daily transaction sub files as defined within the agreed Application Interface Specification (AIS). Pathway have previously indicated that these incidents were due to the failure of processing rules within the TPS Harvester failing as a result of missing transaction attributes of either "Transaction Mode" or start and end time(s). In order to rectify the fault Pathway have provided the following workaround:

- ⇒ A change to the TPS Harvester which checks that all transactions received IN at the Harvester are transmitted OUT to TIP.
- ⇒ Where this check fails, a "repair" mechanism to automatically in-fill the transaction mode as "Serve Customer" or to in-fill the start and end times based on the next transaction within that customer session.
- ⇒ To record any such repairs or residual failures on an event log.
- ⇒ To manually interrogate the event log and raise a report to be e-mailed to POCL

2. Pathway claim that they have discovered all root causes for the failure to transmit transactions to TIP and that, along with the workaround which was introduced sometime during week beginning 09.08.99, bug fixes to correct the root causes have now been sent to the counter. On this basis Pathway assert that the severity of the incident is LOW.
3. However, Pathway's paper *TIP Acceptance Incident Clearance - Update from Lorraine Holt (13/8/99)* - provided to POCL on 13.08.99 indicate that this problem can be caused by a number of root causes, including faults that do not have the same profile as that described above and not all of which have been fully analysed or fixed.
4. Furthermore, there has been an incident where wholesale numbers of transactions were not sent to TIP due to an (albeit unusual) internal processing error within Pathway's central systems. Pathway were unable to detect this failure themselves and their workaround and bug fixes outlined above would not alter this position. Pathway have not provided a mechanism for supplying the (still) missing transactions to TIP (TIP are currently unable therefore to enter the missing transactions into the downstream process(es)). Pathway have indicated that they would be willing to discuss with POCL how they might do this (on an ongoing basis) and admit that there may well be future occurrences which they cannot predict.
5. There have also been incidents where transactional data captured within the outlet have not been passed to TIP in the weekly (outlet) cash account sub files. Pathway maintain that all these incidents are due to POCL not complying with agreed procedures within a contract referenced document (i.e. that POCL will not change a "CORE" product to being "NON-CORE"). However, POCL have not received analysis of all TIP incidents raised and it is not proven that this is the sole cause. Furthermore Pathway's paper *TIP Acceptance Incident Clearance - Update from Lorraine Holt (13/8/99)* - provided to POCL on 13.08.99 indicate that this problem can be caused by POCL changing an outlet status from "Branch Office" to "Sub Office". Following discussions at the acceptance workshop on 11.08.99 Pathway appear to have placed some degree of protection in to the change process, again by specifically forbidding changes of this type within a revised version of the change catalogue. Whist this may inhibit future occurrences of this specific

cause it does not appear to definitively prevent the end result of the outlet accounting stream being incorrect.

3. Business Impact

1. The ICL Pathway service is an integral part of POCL's client accounting system - indeed the service is an accounting service. As such it accounts for turnover of £140 billion per annum involving some 3 billion transactions. Given the scale of this system even relatively small defects are capable of generating errors within the accounts of very significant amounts. POCL's existing manual and legacy automation systems, which Pathway's service will replace, are designed to minimise and correct such errors by incorporating controls and appropriate validation procedures.
2. A major component of the current systems is the matching of the underlying transaction stream to summary totals on the cash account. In the new Pathway service there are currently logged incidents where both the underlying transaction stream is incomplete and where transactions are being "missed" when the service accumulates the summary cash account line. These faults were identified as a result of special controls put in place by POCL to monitor the live trial and not by any system based control operated by ICL Pathway (though such controls are part of Pathway's contractual obligations). It is not known when, if at all, Pathway's controls would have detected these fundamental errors and by inference whether such controls are effective.
3. Pathway has not provided POCL with a complete description of all the faults creating the missing data and therefore POCL has not received any description of how and when all these faults will be fixed. Pathway has admitted that they do not yet fully understand the root cause of all the problems. A 'workaround' has been offered which attempts to trap and correct errors after they have occurred but this cannot provide assurance of a complete solution to the faults in the service, nor has POCL had visibility of the testing plan to ensure that the fix does not introduce further problems.
4. It is a fundamental of any accounting system that it provides a complete and accurate record of all transactions. The ICL Pathway system does not support this fundamental. For example in week 17 there were 89 differences in 20 outlets which extrapolates to 5500 differences over the entire network. For week 18 there were 2451 differences experienced in 67 outlets which extrapolates to 150k differences over the entire network.
5. These "gaps" in data will ultimately be reflected in balance sheet accounts. The nature of these gaps is such that POCL will not be able to readily explain them. To this end our external auditors operating within generally accepted accounting practice will insist that any debit balances are written to Profit and Loss account whilst credit amounts are retained on the balance sheet. Given the nature of the errors concerned the potential is for these write-offs to be significantly threatening the business performance against shareholder targets and potentially as a going concern. The evidence derived from one cash account line alone (approximately 80 affected on a single week) projects the loss to be written off if the integrity issue continues at steady state to be in the order of £4.1m per annum.
6. These balances are also the basis of settlement with clients. Failure to settle accurately with clients could place POCL in breach of contract. Such breach of contract can, in acute or persistent circumstances, lead to termination. Many clients have a right of audit. For government clients this is usually the National Audit Office. The results of such audits can feature in NAO opinions on the accounts of Government Agencies. Such comments are a matter of public record. Integrity failures could thus become a matter of public record damaging the reputation of POCL. Integrity is one of the major attributes of the brand such damage would, therefore, be substantial.

7. Finally this level of difference is operationally unsustainable. The level of resource necessary to investigate and resolve these differences is significant at the 5500 level and at the higher level the resource requirements are impractical i.e. there would be a complete breakdown of POCL's back end accounting as the effort required would be unsustainable - error levels are currently running at twice the normal pre-horizon baseline. In addition, the absolute increase at the 5500 level would increase error processing costs by £2.93m per annum which exceed the maximum capacity level of the TP Business Unit.

4. Severity Rating

Pathway's Severity Rating: **LOW**

POCL's Severity Rating: **HIGH**

1. The transactional and summary level data streams into TIP are currently matched (TIP use the daily transaction sub files to create an outlet account which is compared to the electronic version of the outlet account provided through the weekly sub-file). This control provides the mechanism for assuring both data streams before passing the data on to the downstream processes which drive POCL accounting and client billing. This matching is a temporary internal assurance measure which cannot be sustained during roll out and is therefore intended to be removed. It is only this matching process which has shown the errors in the data streams provided by Pathway - no controls or checks currently exist within Pathway that maintain a similar level of integrity of these data streams. The Pathway rectification provides an input/output check on a single process step in a new, lengthy and complex processing chain which has a track record of being error prone at many levels.
2. POCL assert that checks and controls appropriate to the degree of POCL risk are not present and refer to the following entries in the contract as evidence that they should exist within the Pathway domain:

Schedule A15

1.199.1 The APS shall ensure and demonstrate that all committed transactions have successfully passed from the outlets to POCL and/or clients.
1.200.1 The contractor shall ensure that all captured data are complete and accurately reflected in the appropriate interfaces.
1.200.2 The contractor shall synchronise data flows and storage and shall
(a) monitor data transfers and account for data brought forward, received, passed on and carried forward;
(b) monitor data transfers and account for data, across service interfaces and service components
1.200.6 The contractor shall apply appropriate integrity controls at all interfaces and provide information demonstrating integrity.
1.200.8 The contractor shall meet all reconciliation requirements in contingency situations as well as normal working. (1.200.9) Service levels for all reconciliation requirements are as follows: (a) full reconciliation 100% of items demonstrably accounted for; (b) provision of the ability to reconcile by agreed processes at detailed level, including without limitation at transaction level for transaction data; (c) any differences, doubtful items or errors to be resolved by the contractor; (d) reconciliation reports and identification of doubtful items and errors to be delivered to the authority by 9a.m of the following day.
3. Pathway appear to be suggesting that, because they feel they have fixed most of the occurrences of lost data so far, that this justifies a rating of Low.

4. POCL assert that Pathway have not provided a service that demonstrably guarantees the integrity of the data as required. Because of the Business Impact described in section 3 above, the Severity of this Acceptance Incident must be High.

5. Rectification Plan

1. The current proposed (and partially implemented) rectification plan has not been proven to prevent the continuation of the existing instances of failures. At a meeting with Pathway on 13.08.99, where Pathway's paper *TIP Acceptance Incident Clearance - Update from Lorraine Holt (13/8/99)* was presented, POCL staff remained unconvinced that all root cause analysis had been completed and that fixes had been applied. It was in fact reported by Pathway that another instance had occurred on 10.08.99 that did not fit the profile of any currently known root cause. A failure report had been sent to POCL on 11.08.99 although there was no such agreement in place to do so. Some reported instances still remained open and Pathway have outstanding actions to provide updates.
2. Therefore POCL require a full report of all root cause analysis, fixes and release dates that demonstrably cover all reported faults of this type.
3. POCL require a period of time with no incidents being reported or identified by TIP this must, as a minimum, cover two full consecutive cash account weeks and include a cash account period end.
4. There is currently no agreed method of conveying any missing transactions to TIP for inclusion in the data stream. The transactions missed so far, including the large numbers resulting from the internal processing error, are still missing from the data stream.
5. The daily sub files to TIP (and those to HAPS for AP transactions) are not subjected to integrity checks and controls. POCL require that data processed through Horizon is subjected to integrity checks such that data passing across the interface can be shown to be complete and accurately reflected. The integrity checks and controls should be sufficient to provide a level of protection appropriate to the degree of business risk. POCL believe that this requirement is adequately represented within the contract to deem Pathway non compliant and that the current level of protection, when compared to the business risk renders this non compliance incident as HIGH.