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POST OFFICE LTD BOARD

Outputs of the Fujitsu Services Review of Horizon Online

1.   Purpose

The purpose of this paper is to:

1.1   Inform the Post Office Ltd Board of the progress, outputs and action being taken as a result of the Fujitsu review of Horizon Online following a series of significant incidents in the branch network.

2.   Background

2.1   As a result of the four major service outages experienced in an eight month period, Fujitsu were requested to undertake a review of the Horizon Online service to identify measures to prevent similar issues from occurring again.

2.2   For each of the incidents analysis was performed to identify the root cause. In response, a number of specific process improvement actions and technical fixes were implemented through the standard service management procedures. A process to establish lessons to be learnt from the incidents was then applied. From this we were able to attribute these incidents to the following generic causes:

- Hardware Failures
- Reference Data Distribution Issues
- Release Process Failures

Date	Incident	Cause
27/07/2011	PIN Pad transactions were unavailable between 08:00 and 14:30.	Reference Data[1] delivery
12/12/2011	Banking Transactions were unavailable between 12:54 and 14:30.	Hardware failure
01/02/2012	Post Office Card Account (POca) transactions were unable to complete. In some branches Automated Payments (e.g. utility bill payments), E Top Up and a small number of Banking transactions were also affected. The service was impacted between 08:00 and 11:15.	Release Management process failure
01/03/2012	95% of transactions were unable to complete between 11:00 and 14:30.	Hardware failure

The initial reviews undertaken by Fujitsu have focused on these generic areas. These reviews have now been completed and a series of short/medium term improvement actions have been agreed with Post Office.

The recommended improvements to the service will be delivered by Fujitsu at their cost, and will be monitored through the Service Improvement Plan, which is a process undertaken by Fujitsu and Post Office to deliver continuous improvement.

3.   Improvement Actions Summary

[1] Reference Data – data that is stored on the counter terminals and controls which transactions are available at each branch, and how they function.

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3.1   For each of the areas which caused the service outages the following key improvement activities have been identified. These include process improvements, which address weaknesses that had not been exposed until the incidents, and additional functionality for performance and monitoring delivered through software upgrades.

3.2   <u>Hardware Failures</u>

Service monitoring and fault diagnostics will be improved and upgraded. This will improve the ability to identify issues before the live service is impacted and reduce the response times when incidents occur. This will not only provide monitoring that would have helped resolve the specific incidents that caused the service outages, but will improve monitoring and response times across several areas of the Horizon system.

- Improvements will be made to the server hardware monitoring and failover processes.
- Performance Analysis Tools will be upgraded and will include additional functionality to analyse the performance of the network server hardware (the cause of the service outage on 01/03/2012).
- Transaction flow simulation modelling will be enhanced to include additional key data paths. This enables support teams to use servers that simulate the live traffic across the Post Office network. They can then quickly determine which data paths are working and focus on problem areas, allowing network engineers to locate faults more quickly.
- The operating system software which supports the network routers will be upgraded to improve the robustness of the platforms. These upgrades will improve elements of the network, how we switch across the network devices and how the transaction routers integrate with the network server hardware.

Scheduling of the upgrade activities by Fujitsu Release Management will be completed by the end of May.

3.3   <u>Reference Data Delivery</u>

Testing of reference data has been improved to ensure data is applied correctly to the counters in the branch network. The following actions have been implemented:

- Additional automated data traps have been introduced to intercept data errors before they are released to our branch network counters.
- When data is released it will be enabled on one counter 24 hours ahead of the rest of the Network. This provides a window to correct any issues and re-deliver data before branches are impacted.
- The processes for releasing data have been re-structured to allow additional time for data proving. This has resulted in an additional 5-6 hours for validation on the day of release.
- New automated validation reporting has been introduced to check data before it is released.
- Risk assessments have been introduced to ensure adequate testing and validation has been undertaken before data is released, minimising the risk of incorrectly keyed data impacting the live service.

3.4   <u>Managing Releases</u>

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Improvements will be introduced to the governance processes that control project developments and their release into the live environment. These are targeted to be completed by the end of July.

- Additional levels of documentation for release handover to business as usual teams will be introduced to ensure Fujitsu Service Delivery fully understand the changes that are going live. This will improve their capacity to respond to any service issues.
- Communications processes and process checks will be introduced to ensure test and reference data environments are maintained to the same baseline as live (version control of the test and reference data environments was the cause of the service outage on 01/02/2012).
- Specific owners will be assigned to manage maintenance releases. This follows the process for major releases and will ensure accountabilities are clear.
- A review and re-definition of the roles and responsibilities within the project delivery processes will be undertaken to ensure accountabilities and responsibilities are clear.
- Additional governance will be put in place to ensure planning reflects achievable milestones and has contingent timelines. Conflicts and contentions will be resolved through improved ways of working with POL.

4. Residual Risk

4.1 There is a residual risk inherent in running a system as complex as Horizon Online and it is impossible to eradicate service incidents entirely. However, there has been a thorough review of the incidents that have occurred and lessons have been learnt and remedial actions agreed.

4.2 To ensure the robustness of the reviews Fujitsu involved Subject Matter Experts from both the Post Office account and other client accounts within their business. They have also engaged independent reviewers from Cisco [2]and EMC[3], whose recommendations have been shared with POL.

4.3 The review activities and outputs were subject to assurance and acceptance by Post Office IT & Change teams.

4.4 In the areas that have been the focus of the reviews, no issues have been identified with the core architectural design, but improvements have been identified in the way that change is implemented and the live service monitored and maintained. There is, however, a strategic review of the Post Office end to end IT architecture currently being completed by an external consultancy, KPMG. This may expose further issues or areas of risk, e.g. limitations associated with the active/passive data centre configuration of Horizon Online. This review will be complete by the end of June.

5. Recommendations

The POL Board is asked to:

5.1 Note the contents of this paper.
Lesley Sewell
Chief Information Officer
May 2012

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[2] Cisco – a leading supplier of network solutions, including hardware, software and support services.
[3] EMC - an upper-quartile provider of network storage solutions.