

CASE NUMBER 1HQ16X01238

ALAN BATES & OTHERS [CLAIMANT]

V

POST OFFICE LIMITED [DEFENDANT]

THIRD JOINT STATEMENT OF

JASON COYNE

AND

DR ROBERT WORDEN

01 MARCH 2019

Introduction

This third Joint Statement sets out further areas of agreement between the Experts. The structure of the document captures expert agreements and disagreements on Horizon Issues 3, 4, 5, 6, 7 and 8.

Issues 10, 11, 12 and 13 are omitted from this report and will be dealt with in a fourth Joint Statement as additional Defendant Witness Statements of Mr Godeseth and Mr Parker were only received after business hours 28th February 2019 and the experts need more time to consider the subsequent evidence in relation to those Issues.

We understand that the court wishes to see more emphasis on agreements between the experts in these joint statements. The experts have worked hard to find agreements where possible, and there are some important areas of agreement which are stated in this statement and in the previous joint statement. However, there are also deep disagreements between the experts.

Jason Coyne – In this Joint Statement I have sought to document my agreement or disagreement in respect of the 15 Horizon Issues where I can or cannot reach agreement with Dr Worden. It is my understanding that this is not a responsive report to Dr Worden's supplemental report, therefore I have not added any further comments, criticisms or observations in respect of any responsive report in this Joint Statement.

Expert Agreements and Disagreements by Horizon Issue

Horizon Issue 3 – To what extent and in what respects is the Horizon System “robust” and extremely unlikely to be the cause of shortfalls in branches?

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
3.1	Improving Robustness	Agreed	<p>Irrespective of how you define the detail of robustness, in line with most other large-scale computer systems, Horizon's robustness has generally improved.</p> <p>From our experience of other computer systems, Horizon is relatively robust. We agree that 'robust' does not mean infallible and therefore Horizon has and will continue to suffer faults. Robustness limits the impact of those faults and other adverse events.</p>		

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
			This increase in robustness has, in part, developed from Post Office discovering bugs/errors and defects in live use and then applying fixes and improving monitoring.		
3.2		Agreed	Computer systems are considered more robust if access to the back-end databases is restricted tightly.		
3.3		Agreed	It was possible for some of the Horizon support staff working at Fujitsu to modify the Horizon back-end branch database. In 2012, Post Office's auditors observed that there were inappropriate system privileges assigned to the APPSUP role (which allowed amendments to the BRDB).	5.206 (a)	{D2/4/177}
3.4		RW	Fujitsu took steps to correct the inappropriate system privileges.		
3.5		Agreed	Post Office does not consult the full audit data (unfiltered ARQ Data) before deciding how to handle discrepancies and issuing Transaction Corrections.	5.206 (c)	{D2/4/177}
3.6	Horizon imperfections – likelihood of shortfalls	JC	More bugs/errors and defects have been shown to impact branch accounts than the initial three acknowledged by Post Office.	5.206 (d)	{D2/4/177}
3.7	Horizon Imperfections	Agreed	Peaks show that some defects have lain undetected in Horizon for extended periods without being diagnosed and fixed.	5.206 (e)	{D2/4/177}
3.8	Horizon Changes	Agreed	During the life of Horizon there have been 19,842 changes made to it via the Fujitsu/Post Office release mechanism		
3.9	Horizon Changes	Agreed	It is common modern IT development practice to make frequent incremental builds and releases of software.		
3.10	Changes	Agreed	Specific release note detail has not been provided. Of the 19,842 changes, we would expect that many were minor changes. It is likely that others contained changes to improve the system or to fix bugs and defects.		

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
3.11	Countermeasures	Agreed	The effectiveness of various countermeasures changed throughout the life of Horizon.		
3.12		Agreed	Countermeasures are basic elements of practical IT system design		
3.13	Countermeasures	Agreed	Countermeasures work by limiting the impact of Horizon bugs/error and defects on branch accounts. Countermeasures do not always eliminate the effects of adverse events (they are not perfect) but they are often effective in the area where they are deployed; that is why they have become basic elements of practical IT systems design.		
3.14	Countermeasures	RW	Countermeasures work. I have assessed more than the design aspirations of the countermeasures. I have assessed how the countermeasures were tested; and I have illustrated in a large number of examples, mainly through KELs and Peaks, how they worked in practice.	S1.4; S5.18; S5.211- S5.217	S6.1 App.A
3.15	Extent	Agreed	It is difficult to measure the extent of the robustness of Horizon, apart from how it might limit the extent of impact on branch accounts, as in Issue 1.	S5.5, S5.16	
3.16	Improving Robustness	Agreed	There are indications that in its first year of operation, and in the first year after the introduction of Horizon Online, the system suffered from more problems than in other years. One might expect a higher level of problems in these early periods. The extent to which these problems were serious, or evaded countermeasures, or caused discrepancies in branch accounts, is not agreed.		
3.17		RW	The main way in which the experts have assessed the extent of robustness of Horizon is to ask to what extent failures of its robustness impacted branch accounts. I have addressed this in Horizon issue 1. In answering this question, fluctuations over the years are of less importance than the sum over all years, if the sum over all years is		

{D2/4/8}
{D2/4/126}
{D2/4/179-180}
{D3/6/36}
{D3/7/2}

{D2/4/121}
{D2/4/125}

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs	
			small. I have found the sum of impacts on branch accounts over all years to be very small.			
3.18		Agreed	The users of any IT system play a role in assuring its robustness. The designers of a system should not make unrealistic assumptions about the users of the system. Unrealistic assumptions would lead to inappropriate design, making the system less usable.	S5.19	391, 403.3	{D2/4/126} {D3/1/99} {D3/1/104}
3.19		JC	Mr Coyne cites the following KELs which demonstrate flaws within the recovery procedure: dsed4733R obengc5933K acha1941L surs1147Q			{F/1106} {F/757} {F/960} {F/1433}
3.20	Countermeasures	Agreed	As Horizon has changed throughout its lifetime, the existence and effectiveness of any countermeasures has too. To have considered the time dependence of all robustness countermeasures over 20 years, would have made the expert reports impossibly lengthy. There was not the time to do so.	S5.71		{D2/4/144}
3.21	Countermeasures	RW	'Recoverable' transactions do not arise from system faults in Horizon. Mr Coyne has conflated financial transactions (which may be recoverable transactions) with database transactions.	S5.105 - 107		{D2/4/153}
3.22	Countermeasures	Agreed	Many software bugs can have the same effects as a user error (as illustrated, for instance, by the Dalmellington bug, which produced a remming error).			
3.23	Countermeasures	RW	I base my opinion that Horizon is a tightly-run ship on the high quality of documentation, design, review, and testing evident in many documents I have read; on the Ernst & Young Service audits of Fujitsu, which found a high level of controls to be effectively implemented; on Fujitsu's CMMI accreditation; and on the high quality and effectiveness of problem analysis and problem solving shown in KELs and Peaks.	5.147		{D2/4/163}
3.24	Risk assessment	RW	There is no clear distinction between prospective and retrospective risk assessment. For many projects, there are large risks associated	S5.16		{D2/4/125}

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
			with existing software which must be integrated with the new solution; these risks must be assessed retrospectively. Even without existing software risks, estimation of risks often depends on historic data. Common simple mathematics are employed retrospectively and prospectively.		
3.25	Likelihood of shortfalls	JC	Horizon bugs, errors, and defects, along with mistakes made by Fujitsu/Post Office employees and branch user errors were all likely causes of shortfalls. Therefore, it would be incorrect to say that Horizon was extremely unlikely to be the cause of shortfalls.		

Horizon Issue 4 – To what extent has there been potential for errors in data recorded within Horizon to arise in (a) data entry, (b) transfer or (c) processing of data in Horizon.

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs	
4.1	Extent	Agreed	Bugs, errors and defects identified in relation to Horizon Issue 1 are often relevant to Issue 4 in that they are ultimately errors arising from the processing of data in Horizon.	Coyne Supplemental paras 3.147 – 3.219		{D2/4/53-69}
4.2		Agreed	There is evidence within the Peaks and KELs of bugs/errors/defects within Horizon arising from parts (a), (b) and (c) of this issue that occurred without causing financial discrepancies as well as some that occurred causing financial discrepancies.			
4.3	Reference Data	Agreed	Reference data is critical to the operation of Horizon and errors in reference data have led to discrepancies in branch accounts.	Parker2 Roll2 Various KELs and Peaks		{E2/12} {E1/10}
4.4	Reference Data	Agreed	Of the bugs which in the experts' opinion had the potential to produce discrepancies in branch accounts there may be some involvement of reference data in Bureau Discrepancies, Bureau de Change, Wrong branch customer change displayed, Lyca top-up, and Drop and Go. (rows 14, 23, 24, 25, and 28 of the bugs table in the second expert joint statement) It is notable that these bugs all concerned specific products (arising from the reference data defining those products). So, while reference data bugs may be a significant proportion of the bugs with financial impact, Once discovered, they could be quickly fixed (by a change to the reference data) once the bug is correctly identified.		JS2	{D1/2}
4.5		JC	The full extent of potential for errors in data recorded within horizon arising from a), b) and c) above has been difficult to measure since not all errors are known. However, Peaks and KELs illustrate (by their existence) that errors in data recorded did occur, some with financial impact, some not.			

Horizon Issue 5 – How, if at all, does the Horizon system itself compare transaction data recorded by Horizon against transaction data from sources outside of Horizon?

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
5.1	Reconciliation	Agreed	Reconciliation between transactions recorded on Horizon and transactions recorded by Post Office's clients is largely automated. Detected discrepancies were subject to manual corrective fixes and/or the issue of Transaction Corrections/Error Notices to the Subpostmasters.		
5.2	Back Office Accounting	JC	Post Office back office accounting processes were relevant to branch account accuracy. i.e., Product and Branch Accounting processes and actions in respect of discrepancy investigations and issuing of Cash in Pouches, TCs, Foreign Currency etc.		
5.3	Reconciliation	Agreed	The adequacy of Post Office back office processes to prevent discrepancies in branch accounts can be measured by the quality of the TC process. This quality includes: <ul style="list-style-type: none"> • The processes of consideration of available data • The level of errors observed in the process • The level of complaints or disputes raised following a TC • The level of upheld complaints following a TC • The level of financial impact of erroneous TCs 		
5.4	Third Party Data	Agreed	Errors in third-party data have led to discrepancies in branch accounts, through erroneous TCs being issued on Subpostmasters.		
5.5a	Third Party Data	Agreed	PO does not control the level of errors made by its third-party client organisations (which may lead to errors in TCs), or the delays in their processes (which may lead to delays in TCs).		
5.5b	Third Party Data	Agreed	PO can and should ensure, by careful investigation of disputed TCs, that only a small proportion of errors by PO clients lead to losses for		

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
			Subpostmasters, provided that the Subpostmasters are in good control of their branches and have the required information available.		
5.6	Third Party Data	RW	The figure quoted by Mr Coyne (77% of disputed Santander TCs upheld) illustrates that this process worked well.		

Horizon Issue 6 - To what extent did measures and/or controls that existed in Horizon prevent, detect, identify, report or reduce to an extremely low level the risk of the following: a. data entry errors; b. data packet or system level errors (including data processing, effecting, and recording the same); c. a failure to detect, correct and remedy software coding errors or bugs; d. errors in the transmission, replication and storage of transaction record data; and e. the data stored in the central data centre not being an accurate record of transactions entered on branch terminals?

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs
6.1	Measures and Controls	Agreed	It is agreed that there are many measures and controls within Horizon that existed to prevent, detect, identify report or reduce the risk of varying errors.	Reconciliation Processes, report sets...	
6.2	Failures of Measures and Controls	JC	Measures and controls that existed to reduce the risk of “c. a failure to detect, correct and remedy software coding errors or bugs” were limited.	Bugs/errors/defects resident within the system for elongated periods of time and were only identified in the event of Subpostmaster dispute. Dalmellington, Suspense Account Bug...	
6.3		JC	Evidence suggests that bugs/errors and defects were sometimes dealt with on a cost/benefit basis, therefore risks of errors arising was not reduced as far as ‘possible’.	Coyne 1 st report para 5.161, paras 6.1 – 6.3 POL-0219191	{D2/1/97-98} {D2/1/109} {F/1697}

6.4		JC	Evidence shows that Post Office have awaited the Subpostmaster reporting discrepancies, even when it was aware of potential issues that might impact branch accounts therefore risks of errors arising was not reduced as far as 'possible'.	POL-0449089 Closed Problems tab, cell F99},		{F/1807}
6.5		RW	Because the countermeasures worked well, and Horizon was and is a robust system, the measures and control in Issue 6 worked well, and harmful effects were reduced to an extremely low level.			

Horizon Issue 7 - Were Post Office and/or Fujitsu able to access transaction data recorded by Horizon remotely (i.e. not from within a branch)?

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs	
7.1	Remote Access	Agreed	Fujitsu could access all transaction data recorded by Horizon.	Parker 2		{E2/12}
7.2	Remote Access	Agreed	Both Post Office and Fujitsu can read data remotely, and FJ needs remote access for support purposes	Supp 5.415	Exp 103	{D2/4/238} {D3/1/24}

Horizon Issue 8 - What transaction data and reporting functions were available through Horizon to Post Office for identifying the occurrence of alleged shortfalls and the causes of alleged shortfalls in branches, including whether they were caused by bugs, errors and/or defects in the Horizon system?

Index	Sub Topic	Agreed / JC / RW	Statement	Coyne Refs	Worden Refs	
8.1	Facilities for Post Office	Agreed	Post Office had access to data which would not have been available to Subpostmasters.			
8.2	Facilities for Post Office	Agreed	The descriptions of facilities for PO in the two expert reports are consistent and can be taken together as a description of those facilities.	8.1 – 8.9	1081 - 1088	{D2/1/140-143} {D3/1/238-240}
8.3	Identification of bugs / errors / defects	Agreed	Post Office were reliant upon Fujitsu for diagnosis of whether the occurrence of shortfalls was caused by bugs/errors or defects within the Horizon system.			

Approved for service 1st March 2019

Jason Coyne

GRO

Dr Robert Worden

GRO