WITN09570100

Witness Name: Rupert Lloyd Thomas

Statement No.: WITN09570100

Dated: 4 May 2023

POST OFFICE HORIZON IT INQUIRY

FIRST WITNESS STATEMENT OF *RUPERT LLOYD THOMAS*

I, ***RUPERT LLOYD THOMAS,*** will say as follows...

INTRODUCTION

1. **I** am a former employee of Post Office Counters Limited **("POCL")** and held the position of Information System Specialist.

2. This witness statement is made to assist the Post Office Horizon IT Inquiry.

BACKGROUND/INITIAL CRITICISM OF ESCHER'S RIPOSTE SYSTEM

3. I worked at POCL during and after the Horizon procurement period and left on 1 August 2001.

4. The Horizon project was at odds with POCL policy and culture. Outsourcing a mission-critical system to a third party had never been tried before.

5. At the time, POCL staff were being urged under Total Quality Management to look outside of the business for best practice, to benchmark, to seek excellent exemplars, align with other organisations to benefit from their experience, and to

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use industry standards. The aim was to enter POCL for a Baldridge Quality Award.

6. The question was whether POCL should rely on software that had already been in use by other retailers or banks, with a tried and tested track record, or bespoke software created by the Horizon project.

7. The POOL Information Systems Strategy Unit ("ISSU") staff believed it was possible to use an existing Retail EPOS system as the basis of the new Counter System, using proven code and benefitting from problems solved elsewhere. Why take on the burden of responsibility of a bespoke development when the Post Office, and the public sector in general, had a dreadful track record in the field?

8. There were two opposing groups within POCL. The more traditional group found it hard to accept that counter transactions were similar to those in retail and banking and saw little benefit in looking outside. They could not see that selling a book of stamps was no different from selling a can of beans. They were firmly in the bespoke camp.

9. The main advocates for the use of an existing Retail EPOS system were the staff in the ISSU at headquarters who consisted of Basil Shall, Wendy Powney, Charles Hooper, and me. Charles Hooper had been a member of the procurement assessment team and had seen that other suppliers were tendering existing EPOS systems at the core of their solutions.

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10. There was deep unease in ISSU when the procurement selected the ICL consortium which contained an immature and unproven bespoke system — the Riposte System from Escher. Escher had no experience in large systems, let alone a project on the scale of Horizon. I visited Escher in Dublin, a small operation with a tiny market share. Relying on Escher was akin to gambling.

11. The ISSU knew that the ICL Retail Systems (a different division of ICL from ICL Pathway) had acquired Post Software International **("PSI")** and its GlobalSTORE product on 10th June 1996, before the Horizon procurement. ICL did this to strengthen their retail offer.

12. There was every opportunity to 'ride both horses', but POCL left itself without a Plan B as ICL Pathway suffered from lengthy delays.

13. A derivative Of the ICL GlobalSTORE EPOS system is still for sale from Fujitsu today in 2023.

14. GlobalSTORE conformed to many retail technology standards which would have aligned POCL with other retailers and provided access to new retail developments for example, payment cards, special offers etc. Using a known EPOS retail system would provide access to regular software updates and sharing costs with other users. PSI GlobalSTORE conformed to the Association for Retail Technology Standards **("ARTS")** data model. The ARTS organisation in the USA is still active today in 2023. This means decades of lost opportunity.

15. Adopting standards would help POCL control the supplier, and this was well known in the 1990s.

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16. The debate known as "make versus buy" went on from March 1996 to at least August 1997 but was effectively over by 11 September 1996 when Paul Rich (a marketing man with no IT experience) emailed Charles Hooper et al to reject GlobalSTORE approach. He wrote "...to introduce a PSI solution at this stage would be dangerously risky to the timetable. Andrew (Stott) and others estimate a delay to release 1 of up to a year is likely." "...so, my decision is to stick where we are."

17. Although Paul Rich had already ruled out using GlobalSTORE, he visited PSI in California for a presentation of their GlobalSTORE product on 7 October 1996. He was accompanied by Bob Peaple (IT Director with no IT experience), Byron Roberts (Operations, no IT experience) and Wendy Powney (IT but a junior member).

18. The ICL "makers" continued with their bespoke solution which aligned with nothing, conformed to no standards, was delayed until 1999, and led to disaster.

19. I wrote a timeline of events, dated 22 May 1998, (WITN09570101), as I felt the senior managers at POOL were making unwise technical decisions, which they were not qualified to make, and were no longer listening.

20. There was enough doubt about the ICL Riposte approach to warrant spending money to send a team of POCL managers to California to see an alternative existing retail EPOS system.

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POTENTIAL REASONS FOR INTERMITTENT HORIZON FAILURES - SOFTWARE

21. According to,a *Computer Weekly* inside source, the coding had "no design documents, no test documents, no peer reviews, no code reviews, no coding standards." The Horizon software was what is known in computer parlance as a kludge. Sloppy, non-conforming software with bugs were identified as the root cause of the errors, but we should ask why were there problems in some places and not others? A contrarian would say Horizon worked in most places and the total losses were not sufficient to alarm the accountants.

POTENTIAL REASONS FOR INTERMITTENT HORIZON FAILURES - HARDWARE

22. There were reported lockups and freezes and Microsoft Windows NT blue screens. I think these issues were disastrous.

23. Microsoft Windows NT was introduced in 1993 and Microsoft in the 1990s were new to the retail EPOS market. By 1996 Horizon was betting the farm on Microsoft Windows NT and this would be on the risk register if it exists? Was Microsoft Windows NT ready for retail?

24. Other questions to consider are: Was Microsoft Windows NT being updated with fixes? Was the hardware being damaged in the rugged retail environment due to crashes and inelegant shutdowns? Was the hardware subject to hard reboots?

25. I had a Microsoft Windows NT office system at the time and was familiar with the blue screen of death **("BSoDs") —** a stop error. Accbrding to Wikipedia, BSoDs

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can be caused by poorly written device drivers, malfunctioning hardware such as faulty memory, power supply issues, overheating of components, or hardware running beyond its specification limits. A BSoD will produce a stop error code which points to a particular problem. Were these being recorded and analysed in Horizon?

26. It was unreliable hardware and operating system.

POTENTIAL REASONS FOR INTERMITTENT HORIZON FAILURES — NETWORK

27. In 1996, the largest retail network in the UK was the LINK network that facilitated ATM sharing. Getting LINK to work reliably had taken many years and compared to this, the RIPOSTE messaging capability was new and immature. Managing financial transactions over fragile and unreliable networks took experience and great effort.

28. It was being rolled out in Eire but was not fully proven at the large-scale in POCL. If the RIPOSTE software could not manage, in a robust fashion, network dropouts and brownouts, it was likely that Post Office transactions would get "lost in the network" or, worse still, would get overwritten.

    Stories from Subpostmasters **("SPMs")** tell of counter totals changing without human intervention. This has been seen as the Fujitsu staff making changes remotely, but why did the errors occur in the first place? That may be because of badly implemented software by Fujitsu but may also be because of faulty, immature, and unproven communications software written by Escher.

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POTENTIAL REASONS FOR INTERMITTENT HORIZON FAILURES - POWER

29. In the mid-1990s, the previous counter system at the Branch offices, known as ECCO, was suffering from chronic failures, and plagued by data loss. POOL by that stage already had a lamentable record in losing data. This was attributed to what became known as a "sector slip".

30. A sector slip was writing the transaction data from the EPOS terminal to the wrong part of the floppy disc (the hardware being an inherently cheap solution) thereby ruining the session for the clerk at the counter. They had to punch in all the transactions from that session again, from paper records. Offices had cupboards full of ruined floppy discs. There were terrible rows involving myself trying to get something done about it. The attitude was we were getting the new Horizon system so why waste money on the old one?

31. A senior technical manager at IT Paul Santilli said: "We may never find the cause." I said the cause would not be found unless we looked for it.

32. There were critical lessons to be learned with an existing operational system, which could be. applied to Horizon. There was no culture of learning from mistakes.

33. Following a meeting in La Jolla, California, between Bob Peaple and Byron Roberts, in October 1996, it was eventually decided to appoint Jack Kirk from IT to look into the matter. Kirk concluded that error trapping in the software attempted to write the transaction three times, then if it failed, put the transaction in the wrong place on the disc in error. £500,000 was spent to uncover this.

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34. The ECCO system, managed by the POOL Operations team, had no known protection against electrical outages, power spikes, brownouts or drops. Desk research at the time showed that other retailers had experienced power problems and done something about it. POOL did not know whether it had a problem or not. It is not likely that POOL was immune to power issues and the use of battery-backup for computers was at the time over fifty years old.

35. Byron Roberts, a senior POCL operations manager, refused to investigate the power issue. Some unauthorised very small-scale investigations (one Uninterruptible Power Supply machine), in collaboration with American Power Conversion, a supplier, proved inconclusive.

36. The remedy was known about at the time, but nothing was done. The lessons were not applied to the Horizon project.

37. No Uninterruptible Power Supply (UPS) was fitted in the offices which would have prevented damage to the EPOS terminals. Guarding against crashes was crucial to the smooth operation of the system. Every effort should have been made to prevent them. Prevention is better than cure. The crashes should not have happened.

38. From the deposition of Pam Stubbs, we know that she endured 36 power cuts in one day. You don't need any technical knowledge whatsoever to conclude this might be the root cause of her difficulties.

39. The equipment at Louise Dar's office may very well have been damaged before she took over. Why did it take two hours to boot?

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40. Pam Stubbs says when they closed 3,000 offices the equipment was repossessed for use elsewhere. SPMs were receiving used equipment with an unknown track record, where they could not possibly know what had happened to it previously. Was proper testing conducted on the used equipment prior to delivery? Were POCL passing on problems?

41. Was any technical advice issued to SPMs about avoiding connecting electrical devices to the EPOS circuit e.g. don't plug in a kettle? Many stores would be in a hostile electrical environment, chest freezers cutting in and out etc.

42. There was inadequate power protection.

POTENTIAL REASONS FOR INTERMITTENT HORIZON FAILURES - CULTURAL ISSUES

43. The local managers who were responsible for the Sub Offices would in many cases have had very little knowledge of computer systems and would have struggled to make judgements about any glitches that occurred in Horizon. For many this would have been beyond them. We know they 'went along' with punitive measures against SPMs.

44. To say that a SPM should determine whether Horizon was operating correctly is not feasible, particularly if the reporting suite did not support this? The onus was on POCL to supply a system that was fit for purpose. Could the SPM print out the familiar cash account in Horizon? A document that offices had relied on since the

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year dot. Was the introduction of the new computer system accompanied by unfamiliar procedural changes?

CONCLUSION

45. The subsequent position of POCI.. was that Horizon worked satisfactorily in most locations, and that errors were caused by malice. Unfortunately, POCL lacked a culture of self-examination. The managers literally did not want to know about any problems. Secrecy (hiding behind the Official Secrets Act) and cover-up were the orders of the day.

46. Errors with Horizon were not software problems only, but the result of a cocktail of problems as outlined above.

Statement of Truth

I believe the content of this statement to be true.

Signed: GRO

Dated: 4 May 2023

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No.	URN	Document Description	Control Number
1	WITN09570101	Timeline of Events by Rupert Lloyd Thomas dated 22 May 1998	