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I've been working through the recent independent report into a huge IT migration failure at TSB bank in the UK. The full report is here, and there's a lot to address, but a walk through the executive summary is revealing, almost jaw dropping at times.

[tsb.co.uk/news-releases/...](https://tsb.co.uk/news-releases/)

Important background: the bank was demerged from another UK bank post financial crisis, and acquired by a Spanish company, Sabadell. For a while they rented their spot on the old bank's platform. The acquiring bank's tech function, SABIS, handled the migration and a new platform.

A walk through the executive summary with a few drill downs is very interesting.

Note to screen reader users: this is a scanned PDF so difficult to copy text to the ALT text, but they're all pictures of text so I hope something can be done with that. Apologies if not.

Right from the start, the decision was made to do a "big bang" migration and there was a lack of consideration of other options. [#TSBReport](#)

2.18 TSB did not give sufficient consideration as to whether a largely single event migration was the right choice, what the risks of this approach would be, or how those risks would be mitigated. This choice was not substantively discussed by the TSB Board. In addition, it appears that neither the TSB Board nor the Executive requested or received any advice on this issue from their external advisers.

It seems like the piloting work that was done was inadequate and probably a waste of effort. [#TSBReport](#)

2.20 TSB sought to de-risk the Main Migration Event (the "MME") through a number of Transition Events (Early Cutovers and Live Proving) that migrated or piloted parts of the functionality ahead of Go Live. While the Early Cutovers allowed some problems with the Proteo4UK Platform to be identified and resolved, the functionality put into live use constituted only a small part of the Proteo4UK Platform, and therefore did not significantly de-risk the MME. The Live Proving was not carried out at sufficient scale to allow TSB to identify the problems that would arise when the Proteo4UK Platform was taken live to TSB's entire customer base.

Both the bank and the supplier (SABIS) seemed to be keen to settle on the same target date. The date was defined without up-front understanding of \*how\* they'd hit it. It was just assumed that they could. [#TSBReport](#).

- 2.23 At the time of its offer for TSB in March 2015, and without detailed knowledge of TSB's requirements, Sabadell set an expectation that the Programme would be completed by the end of 2017. By as early as 1 July 2015 (the day after Sabadell's offer for TSB was declared unconditional), Sabadell had identified Sunday 5 November 2017 as the intended date for Go Live.
- 2.24 Nine months of planning within TSB culminated in the March 2016 Integrated Master Plan, which envisaged the same Go Live date of Sunday 5 November 2017. This timetable was ambitious and unrealistic. The pattern of setting a desired end date and then creating a plan to fit that date, whether or not it was realistic or involved taking too much risk, was set for the remainder of the Programme.

The arbitrary date selection seems to have been based on assumptions driven by past projects undertaken by SABIS. (The platform was built in 2000 in part to handle acquisitions and migrations). But they didn't account for TSB's particular requirements. [#TSBReport](#)

- 2.25 Taking confidence from Sabadell's track record, TSB accepted the timetable set by Sabadell. Sabadell (and SABIS) had previously integrated 12 separate banks onto its Proteo platform. TSB did not consider the extent to which this migration experience differed from what was required to meet the challenges presented by the Programme. There were some significant differences, which would have been discovered if TSB had conducted an appropriate due diligence exercise to understand SABIS' capability to deliver the Proteo4UK Platform.

This was in part due to underestimating the need to customise for TSB. The board didn't understand the extent of or SABIS's capability to deliver. The report asserts they'd have behaved differently if they'd known (although I can't see much basis for that conclusion!). [#TSBReport](#)

- 2.52 The TSB Board understood that the Programme was a significant undertaking. However, there were gaps in the TSB Board's understanding of the Proteo4UK Platform's scope and complexity, particularly regarding the extent of the new software being developed to support TSB's digital, telephone and branch channels.
- 2.53 In addition, the TSB Board did not understand the extent to which SABIS' experience was different from what was required to design, build, test and operate the Proteo4UK Platform.

Whatever protections were put in place didn't prevent the very simple issue of trying to migrate before things were ready. [#TSBReport](#)

- 2.26 TSB also believed it had various protections in place (including retention of the Carve-out Exit Option, being insulated from cost overruns, and the Assurance Matrix) to ensure that it would not Go Live before it was ready. In the event, these protections did not safeguard TSB from migrating to the Proteo4UK Platform before being ready.

Functional testing suffered significant overrun, leading to unplanned parallel functional and non-functional testing. [#TSBReport](#)

- 2.28 Functional Testing was used to confirm that the Proteo4UK Platform's functionality worked as intended (for example, whether customers could make payments via the Mobile App). This was originally SABIS' responsibility, but TSB took over both test case design and execution in September 2016. SABIS remained in charge of fixing any defects that were detected by Functional Testing.
- 2.29 Functional Testing took 17 months, which was much longer than anticipated. Delays were mainly due to the volume of defects found and the pace at which SABIS could fix them. In addition, SABIS continually missed deadlines for the delivery of functionality into Functional Testing. As a result, significant amounts of functionality started Functional Testing late.
- 2.30 TSB had planned for a seven month period prior to Go Live, following the completion of Functional Testing (i.e. when the code was stabilised), when Live Proving and Non-functional Testing would be carried out. Non-functional Testing was needed to confirm that the Proteo4UK Platform as a whole could operate at the service levels expected by TSB and its customers at Go Live. However, the delays in Functional Testing meant that it ran in parallel with Non-functional Testing and did not finish until shortly before Go Live.

Sept-October 2017, delay was agreed from the original November 2017 target date, but replanning wasn't comprehensive. No lessons learned were carried into the new plan.

[#TSBReport](#)

- 2.32 The Replan presented an opportunity for TSB to take a realistic view of the status of the Programme and to learn from the Programme's first 18 months. This opportunity was missed. The Replan was not a comprehensive, 'bottom-up' process and there was little attempt to investigate the technical causes of the delays that had been faced to date. In particular, TSB failed adequately to assess SABIS' capabilities and its ability to deliver to the new plan.

Internal audit of the project seems to have badly failed. [#TSBReport](#)

- 2.34 Risk Oversight (which was responsible for providing an independent opinion on the risks associated with the Programme) and Internal Audit (which was responsible for providing an independent and objective assurance of the risk management activities of the Programme Team) broadly concluded that the assumptions underlying the Defender Plan were “reasonable” and “satisfactory overall”. We find this surprising in light of the flaws that we have identified with the Defender Plan.

The board also failed to heed the warnings that were very obvious that the project was overstretched and the platform wasn't ready. [#TSBReport](#)

- 2.35 While the TSB Board asked a number of pertinent questions regarding the Defender Plan, there were certain additional, common sense challenges that the TSB Board did not put to the Executive (including why it was reasonable to expect that TSB would be “migration ready” only four months later than originally planned, when certain workstreams were as much as seven months behind schedule).

Threaded through this seems to have been a situation in which deliverables had been overcommitted, and people did not take responsibility for communicating the lack of readiness. [#TSBReport](#)

- 2.36 TSB also imposed an unnecessary constraint on the time available to complete the Programme by choosing to announce on Friday 29 September 2017 that Go Live would be replanned “into Q1 2018”. TSB made this announcement nine days after formally commencing the replanning process, and therefore without any proper assessment of the volume of work remaining or when the Proteo4UK Platform was likely to be ready.
- 2.37 In addition, TSB was not transparent about the real reasons behind the decision to delay Go Live (namely that the Programme was several months behind schedule) and instead suggested that the Proteo4UK Platform was almost ready. Having suggested, incorrectly, in September 2017 that the Platform would be ready by the end of November 2017, this would have made it more difficult to announce that the Platform was not in fact ready in the lead up to the new Go Live date of April 2018.



An obvious and damaging impact of these compressed timelines was that testing was shortened, over-parallelised, and incomplete. [#TSBReport](#)

- 2.39 The intention had been to deliver and test the core functionality of the Proteo4UK Platform by the end of 2017, to avoid parallelisation in the Programme and to allow three months for additional assurance testing and proving. The reality was very different. Functional Testing continued into April 2018, and was only brought to a close by deferring and de-scoping significant elements of functionality for completion after Go Live. The dedicated regression testing phase included in the Defender Plan did not take place.
- 2.40 The Programme had therefore run out of time and, as a result, the majority of Non-functional Testing (which was needed to confirm that the Proteo4UK Platform as a whole could operate at the service levels expected by TSB and its customers at Go Live) was conducted in a highly compressed period shortly before Go Live.

And again, people seemed not to speak up about those issues with testing. [#TSBReport](#)

- 2.41 While the Programme's progress was tracked and monitored following the Replan, this had material limitations. For example, certain areas (in particular Non-functional Testing) received disproportionately less reporting than others, and updates on the Replan risks often lacked any commentary explaining the significance of the facts being reported. Consequently, as the Programme strayed further from the principles, assumptions, dependencies and milestones set out in the Defender Plan, TSB did not sufficiently interrogate these deviations, what they meant for the overall risk profile of the Programme, or how they impacted on the readiness of the Proteo4UK Platform.

Non-functional testing (particularly performance) was badly inadequate, perhaps primarily due to the timescale compression. Performance testing was not carried out across both datacentres despite there being material differences in configuration between the two. [#TSBReport](#)

- 2.43 Shortcomings with Performance Testing included the following:
- (A) There were issues with the configuration of the two data centres, which contributed significantly to the problems experienced by TSB digital customers immediately after Go Live. As the decision was taken to conduct Performance Testing on a single data centre, it was impossible to identify these issues before Go Live.

This one is one of those jaw-drop moments. When performance tests failed, the targets were downgraded, which allowed the tests to pass... at a level lower than the actual production load at go-live.

[#TSBReport](#)

- (B) During execution of the Performance Testing for Internet Banking and the Mobile App, test targets were lowered after tests did not pass at the original target load. The summary of Non-functional Testing results did not make it clear that the targets had been changed, and the actual volumes following Go Live exceeded the lowered test targets. As such, the Non-functional Testing results presented a more positive view than was warranted of the risk that the Proteo4UK Platform would not be able to perform at the volumes likely to be experienced after Go Live.

The board missed key chances prior to go-live to reflect on the bad situation. But it was also misled about the scale of issues. [#TSBReport](#)

- 2.44 In the lead up to Go Live, the TSB Board should have done more to assess, and should have provided a stronger challenge to, the Executive's explanation of the adequacy of testing. The TSB Board also should have requested more details about the status of the Programme's readiness, given the extent to which the Programme had deviated from the Defender Plan. There were clear indications, which the TSB Board should have interrogated, of the frantic pace at which key Programme activities were being finalised so close to the proposed date for Go Live. The 10 April 2018 TSB Board meeting was a missed opportunity to pause and reflect on these issues.
- 2.45 The TSB Board was not provided with an accurate view of the defects outstanding in the Platform at the point of Go Live; the actual number of defects was at least two and a half times the "around 800 defects" reported to the TSB Board.

I was curious about that defect count, and drilled into the main body of the report. The internal communication was obfuscating and misleading. It implied that most of a total 85,000 defects had been fixed, and hence only 1% of defects were being carried forward...

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- 18.21 In its consideration of the evidence available to determine whether "the bank that [TSB would] go live with" on 22 April would be "sufficiently complete to enable [TSB] to serve [its] customers adequately", the T3 Memo identified that a number of "defects" would be taken into the live environment:

*"of the c.85,000 defects raised during the programme we will be taking around 800 defects into live".*

...but actually, the numbers were not equivalent. There were 800 pieces of functionality each of which had one or more defects.

[#TSBReport](#)

18.23 Accordingly, the number of Defects that were actually present in the Platform at Go Live was 3,317, a significantly greater number than that reported to the TSB Board in the T3 Memo on 18 April. As we explained in chapter 17, TSB did not at the time of Go Live, and did not during the course of our Review, have a comprehensive view of the Defects raised during the Programme and remaining open at the MME.

SABIS's lack of readiness to support the platform was a key issue identified in the report. They had already struggled through smaller preliminary go-lives. [#TSBReport](#)

2.46 SABIS had been operating some limited live services prior to Go Live. It had struggled for a period after each Transition Event put new services live, failing to satisfy agreed service levels.

2.47 The evidence requested and received by the TSB Board and the Executive from the Sabadell Group regarding SABIS' readiness to operate the Proteo4UK Platform ahead of Go Live was inadequate. A report by Deloitte Spain (commissioned by SABIS) which identified deficiencies in SABIS' internal controls was not shared with TSB.

SABIS did not have sufficient support and remediation capacity in place, but this came out only after the event in reports by both SABIS and TSB. [#TSBReport](#)

2.49 It is clear from statements made, and remediation work completed, after Go Live that SABIS had not been ready to operate the Proteo4UK Platform. For example:

- (A) a September 2018 report prepared by the Sabadell Group COO stated that SABIS *"did not have sufficient capacity to respond and to resolve incidents"* at Go Live; and
- (B) a November 2018 report prepared by the TSB CIO stated that SABIS' *"insufficient ability to operate the new IT platform"* had exacerbated TSB's problems after Go Live.

Jaws ready again. \*Prior\* to go-live, however, it seems TSB had simply relied on a written assurance by SABIS's country MD that they were ready. They didn't receive any evidence to back this up but instead proceeded apparently on the basis of this letter.

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2.50 In addition, instead of a formal, evidenced attestation from either SABIS or Sabadell in the lead up to Go Live, TSB received only a letter from the SABIS UK Managing Director. This should not have satisfied TSB that SABIS would be ready to perform its obligations, as the statements in that letter plainly relate to the SABIS UK Managing Director's expectations regarding the performance of the Proteo4UK Platform, rather than his expectations regarding the ability of SABIS to operate it.

Here's that letter. [#TSBReport](#)

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# Sabis.

London, 5th of April 2018

Reference: Non-functional readiness

Dear [REDACTED],

As part of the preparation for the decision on the execution of the Migration from LBG to TSB's new system, you have required that I provide you with comfort regarding the ability of the new Platform to meet the Service Level Agreements between SABIS and TSB.

Over the last months, as you are well aware, we have executed reasonable different tests in agreement with your CTO team in order to prove resilience and performance. A summary of the results is being provided to you along with this letter. I trust that the information contained in that document will satisfy your need for evidence that, within reason, we expect the Platform to perform as required on both accounts for the current business volumes and system access behaviour patterns. In the few exceptions where there are further tests that need to be completed in the next week or so, because of different circumstances, we feel comfortable that we will not find any cause for concern towards being "migration ready" by the 19<sup>th</sup> of April.



Also, from the point of view of critical Third Parties ("fourth parties" in the case of TSB), I have received positive written confirmation from First Data, Microsoft and Unisys that they are confident that their infrastructure is fit for purpose and therefore that they are prepared for the expected volumes and are also committed to provide the agreed Service Levels. I am awaiting written confirmation from BT, but I do not expect any issue in receiving it from conversations on the subject.

Finally, please rest assured that while we are confident on the "migration readiness" of the Platform, we have plans in place to continue working on performance so as to further improve TSB's customers' and partners' experience, and to cater for future growth plans in advance.

Please feel free to reach out should you need any additional information

Kind regards,



Managing Director

There were major warning signs but the supplier appeared to get a soft ride from both TSB and auditors. For example, 15.13 notes a report from KPMG Spain just two months before the major failure. A lack of capacity management controls was brushed off as minor.

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- (A) in relation to capacity management, that it was *"unable to evaluate controls related to capacity management"* as *"there were no controls operating"* at the time of its review. TSB has pointed out that this finding was rated "Low", and that KPMG Spain had not been able to evaluate the design controls related to capacity management as at the time of the review the capacity management function was being created. In TSB's view, this was *"not a material risk"*;

And is this our old ITSM friend, the CMDB without purpose?

[#TSBReport](#)

- (B) in relation to configuration management, that there were *"no baselines defined for the configuration items in [the] CMDB (including infrastructure and applications)"*. KPMG Spain recommended defining *"a configuration baseline and keep[ing] it up-to-date...in order to identify potential issues or deficiencies"*; and

The bank didn't perform adequate upfront due diligence or exercise the extent of their rights to audit ongoing work by SABIS.

[#TSBReport](#)

2.56 TSB did not conduct a comprehensive due diligence exercise to understand SABIS' capability to deliver the Proteo4UK Platform. In addition, TSB did not adequately exercise its contractual audit rights during the Programme in order to understand:

- (A) the quality and completeness of the platform being designed, built and tested by SABIS; and
- (B) SABIS' capacity to operate that platform and to deliver the service required by TSB and its customers.

The report suggests the bank was over-integrated with the supplier... directing operations more than a typical "customer" of such a relationship. I'm not sure about this one - was the relationship too close or too distant? The report seems to be suggesting both.

[#TSBReport](#)

2.57 The TSB CIO's role meant that he was the customer of SABIS' services to TSB, but also (having previously been the Chief Process and Information Officer at Sabadell and in effect run SABIS) continued in practice to direct much of SABIS' work as supplier. In our view, this made it difficult to manage SABIS on an arm's length basis. Without an appropriate arm's length relationship, there was insufficient clarity between the parties as to who was assuming the risk in certain key decisions (including, for example, the decision to conduct Performance Testing on only one data centre).

Although this was a project of unprecedented complexity for both TSB and in the context of UK banking as a whole, the bank didn't seek sufficient independent advice to validate the capability and work of its supplier and its own executives.

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2.62 Although additional resource and capability was obtained through third parties (including the TSB Board Advisers), the TSB Board did not take independent advice on the Programme as a whole, nor appoint advisers with an appropriate mandate. This was required to provide an objective and authoritative view on the progress of the Programme and to assist the TSB Board in appropriately challenging the Executive. This advice therefore needed to be independent of the Executive, but also independent of Sabadell, given that TSB's prime contractor was a fellow subsidiary.

Finally, the report asserts that independent advice might have led to different decisions on supplier, platform, approach, and also would have prevented the project carrying on regardless when it was failing. [#TSBReport](#)

2.64 Had the TSB Board obtained independent advice on the evidence available to it to support the decision to Go Live, it might have identified, for example, the weaknesses in the Non-functional Testing evidence and in the assurances of SABIS' readiness, and therefore that TSB was not ready to Go Live on the weekend of 20-22 April 2018.

If nothing else, this is a fine piece of evidence for the "there is no single root cause" camp.

I'm also sorely tempted to point out the many similarities to Brexit, but I'd better not.

My feelings on this: it seems like a classic failure of a big waterfall project. Maybe circumstance forced the decision to structure it that way, but it's a good example of why not to do it. Probably had a big human cost along the way in terms of horrible stresses and workloads.

For those unfamiliar with the story or wanting to know more, here's a good Guardian article about it...

#### Timeline of trouble: how the TSB IT meltdown unfolded

Why the chief executive, Paul Pester, faces a second round of questions from MPs

<https://www.theguardian.com/business/2018/jun/06/timeline-of-trouble-how-the-tsb-it-meltdown-unfolded>