ASX Limited

Independent Expert Assessment of ASX's Actions to address the IBM Review Recommendations

12 August 2022

EY

Building a better working world

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EY

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1.   Executive Summary

Reporting summary for quarter

Our assessment found that ASX has continued to make progress towards addressing and implementing the IBM Review Recommendations this quarter and has finalised and closed off a number of carryover ASX Actions (items determined to be incomplete) from prior quarterly reviews.

The Program continues to be well run, has the appropriate governance and oversight, and is staffed and supported by individuals well suited to deliver a quality outcome against the ASX Actions. We note that Covid and common flu exposure are a potential issue and recognise that the management team is tracking this exposure yet has limited options to address it practically. Furthermore, ASX has continued to demonstrate that they have taken feedback from our previous quarterly IE reviews and reports (including findings in the Design Adequacy report), and incorporated learnings and improvements into this review period.

In the March 2022 ASX quarterly report submitted on 13 April 2022, ASX had forecasted that a further fourteen (14) Recommendations would be submitted for closure during the June 2022 quarter. However, during the monthly meeting on 27 May 2022, ASX notified ASIC, RBA and EY that two (2) Recommendations would be deferred to later quarters, to allow for a volume of changes delivered in previous quarters and the June 2022 quarter (related to project risk and project assurance), to be supported and embedded appropriately. ASX submitted twelve (12) Recommendations for closure in their June 2022 quarterly report.

ASX has appropriately executed and fully completed twenty-six (26) out of a total of thirty-seven (37) ASX Actions submitted for closure. There are six (6) ASX Actions out of the total submitted that have been executed but will need to be embedded in some form in practice to demonstrate ongoing sustainability. Of the twelve (12) Recommendations submitted in this review cycle, five (5) of those Recommendations have been fully addressed, with seven (7)

Recommendations partially addressed and requiring follow up evaluation in subsequent review periods. This brings the total number of submitted Recommendations to forty-three (43) at the end of this third quarterly review, with thirty-five (35) of those fully addressed and closed, and eight (8) partially addressed and requiring follow up evaluation in subsequent quarters.

The forty-three (43) Recommendations submitted by ASX to date, represent a submission completion of 73% of the total fifty-nine (59) Recommendations required to be addressed under the Licence Condition, and a completion of 76% of the planned completed submissions as per ASX's updated delivery workplan in June 2022.

We will continue to evaluate and offer commentary on the processes, governance, and resources as we evaluate the closure of ASX Actions addressed by the Program in the future.

Historic findings and recommendations

This is our third Independent Expert quarterly review report under the Licence Condition.

In the first IE quarterly review report (ASX Independent Assessment of IBM Recommendations Review) submitted on 28 February 2022, we found that out of the twenty-two (22) Recommendations submitted for closure, eighteen (18) Recommendations had been fully addressed with four (4) Recommendations requiring follow up evaluation in subsequent review periods. Specifically, of the forty-nine (49) ASX Actions related to the twenty-two (22) Recommendations, forty-four (44) Recommendations had been fully completed.

In the second IE quarterly review report (ASX Independent Assessment of IBM Review Recommendations_May 2022 Final Report_13052022) submitted on 13 May 2022, we found that out of the nine (9) Recommendations submitted for closure, six (6) of those Recommendations had been fully addressed, with three (3) Recommendations partially addressed and requiring follow up evaluation in subsequent review periods. Of the twenty-three (23) ASX Actions related to the nine (9) Recommendations, twenty (20) had been fully completed.

In our Design Adequacy Report (ASX_Independent Expert Design Adequacy Assessment of the ASX Response Plan_27042022_Final Report) submitted on 27 April 2022, we found that of the remaining 37 Recommendations that were due for submission in future quarterly reviews at that time, there were thirteen (13) partially addressed Recommendations.

We are tracking the progress of the partially addressed Recommendations in this report (section 3.1), and ASX have provided an update as part of their June 2022 quarterly review submission.

For detailed progress of the fifty-nine (59) IBM Recommendations please refer to Appendix E.

Background

In November 2020 an outage occurred following a major upgrade to ASX Operations Pty Ltd equity trading platform (ASX Trade), called the ASX Trade Refresh project. Consequently, the Australian Securities and Investments Commission (ASIC) and the Reserve Bank of Australia (RBA) required an Independent Expert review of the ASX Trade Refresh project to be completed. ASX appointed IBM Australia Limited (IBM) to undertake this review. IBM made fifty-nine (59) recommendations ("Recommendations" or "IBM Review Recommendations") in total across the following seven key domains in the review: risk, governance, delivery, requirements, vendor management, testing and incident management.

ASX subsequently developed a management response plan ("Response Plan" or "Plan") which consists of 182 deliverables ("ASX Action") to address the fifty-nine (59) IBM Recommendations.

In November 2021, the Minister imposed certain Licence Conditions on ASX. The Australian Market Licence (ASX Limited) Additional Conditions Notice 2021 (No. 1) dated 24 November 2021 requires ASX to:

- Address each of the IBM Review Recommendations to the satisfaction of ASIC, and

- Appoint an Independent Expert ("IE") to conduct an assessment of its implementation of the ASX Actions to address the IBM Review Recommendations.

Scope

In accordance with the relevant Licence Conditions, ASX, with ASIC's and RBA's consent, engaged Ernst & Young ("EY") to review each of the Quarterly Reports produced by ASX and assess whether the actions undertaken in the period covered by the report demonstrate appropriate implementation of, and progress towards addressing the IBM Review Recommendations. Refer to section 2.2 for detailed scope related to this report.

Approach

Our approach is to assess the quarterly reports produced by ASX. This includes an assessment of the closure packs and supporting evidence for the ASX Actions reported as closed during the period. As part of our assessment, we will consider:

- Whether the ASX Actions comprehensively address the relevant IBM Review Recommendations

- Whether the ASX Action is implemented in a sustainable manner

- The skills and experience of the people engaged by ASX to implement the ASX actions

- The closure of ASX actions is supported by demonstrable evidence, and has been subject to appropriate internal due diligence and governance processes

- The consistency of the attestations reported in ASX's quarterly report with our understanding of the status of the ASX actions.

Refer to section 2.3 for detailed approach related to this report.

2.   Introduction

2.1   Background

Recommendations Review

To address the fifty-nine (59) IBM Recommendations, ASX subsequently developed a management response plan which consists of 182 deliverables. The Plan is structured around the following seven elements (which are different to the seven domains from the IBM review) that seek to improve ASX's project execution capability and to reduce the likelihood of similar project execution incidents in the future:

- Ensuring diverse thinking, avoidance of group think and challenge
- Increasing resources
- Upgrading policies, standards, and frameworks
- Educating staff so that they clearly understand the standards and practices expected of them
- Monitoring individual projects and the portfolio for compliance with ASX's policies, standards and
- frameworks
- Improving ASX's testing capability and capacity
- Improving ASX's project reporting and quality.

In November 2021, the Minister imposed certain Licence Conditions on ASX. The Australian Market Licence (ASX Limited) Additional Conditions Notice 2021 (No. 1) dated 24 November 2021 requires ASX to:

- Address each of the recommendations to the satisfaction of ASIC, and
- Appoint an Independent Expert (IE) to conduct an assessment of its implementation of the ASX actions to address the IBM review recommendations.

ASX has obtained the consent of ASIC to appoint Ernst & Young (EY) as the IE to conduct this assessment.

2.2   Scope

EY has been engaged to deliver the following scope of work:

In accordance with Licence Condition 4, ASX must by 31 January 2022 and thereafter within 14 days of each quarter end date occurring during the period from 31 March 2022 to 30 June 2023, give a report to ASIC and the IE containing an update on:

- The progress of the implementation of the ASX actions to address the review recommendations, and
- If there are any issues in implementing any remediation actions, the reasons for those issues and what action ASX will take to address them.

The quarterly report must be accompanied by an attestation from the relevant oversight body from ASX.

The scope of our engagement as the IE in accordance with the relevant licence condition is to:

- Review and assess each of the quarterly reports produced by ASX (as required under Licence Condition 3) and
- Within 30 days of receipt of each quarterly report, provide ASX and ASIC with a written report setting out whether the ASX Actions undertaken in the period covered by the report demonstrate appropriate implementation of, and progress towards addressing, the IBM review recommendations.

2.3   Approach

When conducting our assessment for the delivery of this report, the following activities were performed:

1. *Documentation review:* A detailed review and analysis of ASX's actions and provided artefacts, including closure packs, written responses, and additional supporting evidence. All documentation

was provided to EY by ASX based on a documentation request. A list of documentation reviewed can be found in Appendix D.

2. *Questionnaire submission to ASX:* Following review of the documentation, the EY team submitted a set of questions (if any) related to the recommendations and subsequent ASX actions 48 hours prior to the meeting where ASX prepared responses for the joint recommendation review workshops. A list of questionnaires submitted to ASX can be found in Appendix C.

3. *Recommendation review workshops:* Workshops were held to review and discuss the recommendations between key ASX stakeholders and EY SMRs (Subject Matter Resources) to go through the pre-submitted questions related to ASX's remedial actions approach. A list of all workshops conducted with ASX can be found in Appendix A and a list of interviewed ASX stakeholders can be found in Appendix B.

4. *Observation workshops:* EY SMRs attended and observed an in-person workshop in June 2022, held by ASX as part of the implementation of ASX's Risk Awareness Culture training to gain firsthand experience of how training sessions were rolled out. Additionally, an introductory session for Project Assurance was conducted for EY SMRs in early June 2022 to provide early sight of the new Project Delivery Assurance Framework.

Following our review of the documentation, supporting evidence and knowledge gathered from recommendation review workshops with the relevant ASX stakeholders, the EY team have determined whether the ASX Actions are appropriate to close the IBM Recommendations by adopting the following approach for each of the ASX Actions:

1. **Has the recommendation been fully addressed by the ASX Action(s)?**

   Yes ✔ / No ✘ / Partially done ✔

2. **Were ASX Action(s) in response to the IBM Recommendation reasonable and appropriate?**

   Yes ✔ / No ✘ / Partially done ✔

3. **Is the ASX Action(s) sustainable? Has the ASX response to the recommendation considered measures to enforce / ensure that the ASX Actions remain closed in the future?**

   Yes ✔ / No ✘ / Partially done ✔

The assessment criteria described above determines if the recommendation was fully, partially, or not appropriately addressed. For detailed and comprehensive commentary around our decision, please refer to each recommendation's 'Findings' section.

2.4 Limitations

We draw your attention to the limitations inherent in this report:

- Our work was not performed in accordance with generally accepted auditing, review, or other assurance standards in Australia and accordingly does not express any form of assurance. This report does not constitute legal opinion or advice. We have not conducted a review to detect fraud or illegal acts.

- Our work does not assume any responsibility for any third-party products, programs or services, their performance or compliance with your specifications or otherwise.

- Our work did not intend to identify, address, or correct any errors or defects in your computer systems, other devices, or components thereof ("Systems"), whether or not due to imprecise or ambiguous entry, storage, interpretation, or processing or reporting of data. We are not be responsible for any defect or problem arising out of or related to data processing in any Systems.

- Our Recommendations review was limited to the information available and provided by ASX at this stage, where for future reviews included in the plan only high-level planning has been conducted and a detailed analysis of scope and effort is pending.

- Our review was limited to documents provided by ASX as deemed relevant in line with the agreed scope and EY requests, with the expectation that ASX had those artefacts documented to satisfy its own reporting needs.

- Any projection of the outcome related to the recommendation's response and its sustainability for future periods, is subject to the risk that the actions may become inadequate due to changes in conditions, or that the degree of compliance around remedial actions taken may deteriorate over time.

- Our scope under the licence conditions requires us to oversee the ASX Actions taken related to ASX's Plan and our Independent Expert review which are relevant to the recommendations and its remedial actions. For the purpose of our engagement, we define oversee as to observe and inspect ASX has acted accordingly. ASX is accountable and responsible for the implementation activities and EY will not act as management or direct the implementation.

2.5   Use and disclosure of our reports

We are providing specific advice only for this engagement and for no other purpose and we disclaim any responsibility for the use of our advice for a different purpose or in a different context. If you plan to use this advice on another transaction or in another context, please let us know and provide us with all material information that we can provide advice tailored to the appropriate circumstances.

Our Reports (including the EY Summary Reports) may be relied upon by ASX and ASX's regulators, ASIC and the RBA, for the purpose outlined in this SOW only. We understand that ASIC and the RBA may issue a media release and/or a public report referring to or publishing the content of our Reports and may publish our Reports and/or the EY Summary Reports or make or issue its own summary from the content of our Reports.

For the avoidance of doubt, no other party other than ASX, ASIC and the RBA may rely on the Reports. We disclaim all responsibility to any such other party for any loss or liability that the other party may suffer or incur arising from or relating to or in any way connected with the contents of our Reports, the provision of our Reports to the other party or the reliance upon our report by the other party.

3. Monitoring of Partially Addressed Recommendations and ASX Actions

3.1 Previous quarterly review periods

The objective of this section is to monitor the status of IBM Recommendations that were submitted in previous quarterly review periods and deemed "partially addressed" or "not addressed", and determine if it is fully executed and/or appropriate and/or sustainable following a re-submission by ASX and re-evaluation by the IE.

Q1 January 2022

In the first quarterly report submitted by ASX on 28 January 2022, we identified four (4) out of the twenty-two (22) submitted Recommendations as needing further evidence in future quarters for re-evaluation:

- 1.2.1 - Ensure Line 2 resource expertise
    - Sustainability of Action 1
    - Sustainability of Action 2

- 5.1.1 - Perform contract acceptance at end of project lifecycle
    - Sustainability of Action 1

- 5.1.2 - Create guidelines for supplier contract acceptance testing
    - Full execution of Action 1

- 6.6.1 - Ensure ASX Trade included in next annual ITDR exercise
    - Sustainability of Action 1

ASX has submitted all four (4) Partially Addressed Recommendations for re-evaluation in Q3 and below are the re-evaluation outcomes:

1.2.1 - Ensure Line 2 resource expertise

1. A new Senior Manager, Enterprise Risk Management will be recruited to be the Line 2 representative on P1 and/or high-risk projects (excluding CHESS)
2. Post the PRA, the Sponsor and the CRO will attest that appropriate expertise for Line 2 challenge is available
3. Review the current Expectations of Line 2 on PSGs documentation

Outcome from Q1	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While the ASX has appropriately identified the need for an additional Line 2 resource and implemented this Recommendation, at the time of writing this report, ASX has not exercised an ongoing process to evaluate Line 2 Risk coverage and capability. As a result, we are marking the sustainability of this item as "Partially Met" until such time that we can confirm that governance around Line 2 Risk coverage and capability has been exercised. EY will include the completion of this "Partially Met" item in its scope for subsequent reviews.		
Outcome from Q3 Re-evaluation	Fully Addressed		
Comment	This Recommendation is now fully addressed. ASX has introduced an Attestation process which requires the project to assess whether there is sufficient Line 2 resourcing, both in terms of capacity and availability. The CRO and Project Sponsor are required to sign off on the Attestation in Confluence.		

5.1.1 - Perform contract acceptance at end of project lifecycle

1. Update ASX's Vendor Management framework to require contract acceptance at the end of the project lifecycle once integration and end to end testing have been completed

Outcome from Q1	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While the ASX has appropriately identified the need for updating the Vendor Management framework and has shown clear intent and evidence to support this intent to implement their education program by the end of the financial year (FY22), it has not been completed to date. As a result, we are marking the sustainability of this item as "Partially Met" until such time that we can confirm that the training has been completed and embedded into an ongoing plan. EY will include the completion of this "Partially Met" item in its scope for subsequent reviews.		
Outcome from Q3 Re-evaluation	Fully Addressed		
Comment	This Recommendation is now fully Addressed. In July 2022, ASX carried out the 'Procurement and Vendor Management Framework Training' to Contract Owners, Project Managers, Risk Champions and Suppliers. The request for attendance at the training was made by the Group Executive, Technology & Data CIO. ASX has confirmed this training will be provided on an ongoing basis. New starters will be captured through the HR induction course as the function has a standing agenda item in new starter induction, alongside security awareness and data privacy. Post this introduction session, new starters will be provided with the full course that was delivered in July 2022.		

	The training addressed the Recommendation and update of the ASX Vendor Management Framework. Future stakeholders should refer to Training Material *"Procurement and VMF Training.pdf"* for future guidance around the framework.

5.1.2 - Create guidelines for supplier contract acceptance testing

1. Guidelines will be created for supplier related contract acceptance testing. These will be referenced in ASX's Testing Policy and ASX's vendor Management framework

Outcome from Q1	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While the ASX has appropriately identified the need for updating the guidelines for supplier contract acceptance testing, it has not been fully completed to date as only 14 out of 15 acceptance testing criteria have been completed. ASX will address the final acceptance testing criteria by June 2022. As a result, we are marking the execution of this item as "Partially Met" until such time that we can confirm that the minimum and expected targets (KPI) are included in the Actors testing session, EY will include the completion of this "Partially Met" item in its scope for subsequent reviews.		
Outcome from Q3 Re-evaluation	Fully Addressed		
Comment	This Recommendation is now fully addressed. ASX has updated the KPI/SLA measurement table under section '3.9 KPIs/SLAs' in the 'Vendor Quality Guidelines, Standards and Controls' document. The 'Actors Testing' acceptance criteria, which was previously stated as		

	"TBC" in the document, has now been updated with the required information.

6.6.1 – Ensure the new ASX Trade refresh is included in next annual ITDR exercise

1. Ensure ASX Trade is included in next annual ITDR exercise

Outcome from Q1	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While the ASX has appropriately identified the need for ASX Trade to be part of their ITDR and successfully executed a DR test on ▮▮▮▮▮, they have also identified that DR testing is to be done on the ASX Trade platform every 12 months afterwards, with the next annual ITDR scheduled for ▮▮▮▮. As a result, we are marking the sustainability of this item as "Partially Met" until such time that we can confirm that the ITDR scheduled for ▮▮▮▮ has been executed as part of their ongoing plan. EY will include the completion of this "Partially Met" item in its scope for subsequent reviews.		
Outcome from Q3 Re-evaluation	Fully Addressed		
Comment	This Recommendation is now fully addressed. ASX has completed the ITDR for ASX Trade scheduled for ▮ ▮▮▮▮ and provided the following evidence to support: ▮▮▮▮ ▮▮▮▮ ▮▮▮▮		

Q2 March 2022

In the second quarterly report submitted by ASX on 13 April 2022, we identified three (3) out of the nine (9) submitted Recommendations as needing further evidence in future quarters for re-evaluation:

- **1.2.6 - Review project priority categorization requirement**
    - Execution of Action 4
    - Sustainability of Action 4

- **1.3.6 - Identify project risks using techniques to get diverse views**
    - Full execution of Action 4
    - Sustainability of Action 4

- **6.4.8 - Consider using independent expert to review test plan for high risk projects**
    - Full execution of Action 3
    - Sustainability of Action 3

ASX has submitted two (2) of the three (3) Partially Addressed Recommendations (1.2.6 and 1.3.6) for re-evaluation in Q3 and below are the re-evaluation outcomes:

1.2.6 - Review project priority categorization requirement

1. Project Risk Specialist to be recruited (New Headcount) to refresh the Enterprise Project Risk Management Framework and associated templates, metrics and controls and manage the framework going forward
2. Review criteria for assessing P1, 2, and 3 projects and management actions that follow
3. Review criteria for assessing high, medium, low risk projects (PRA) and management actions that follow
4. Present this to the PGG
5. Update impacted policies after PGG endorsement

Outcome from Q2	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
ASX Action 4	✘	✔	✔
ASX Action 5	✔*	✔	✔*
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While ASX has reviewed their criteria for assessing P1, P2 and P3 projects, and the criteria in the PRA for assessing high, medium and low risk projects, to support the implementation of the Recommendation, ASX has not executed Action 4 as at the time, they deemed the changes made not material enough to require PGG presentation and sign off, and the Line of Business executive had already reviewed and endorsed the changes. However, following a meeting on 12 May 2022, ASX has confirmed that as per their internal process, the changes are required to go to the PGG for endorsement and sign off as per their RACI matrix, and they will do so accordingly. In terms of Action 5, ASX determined that policies were not required to be updated as they had already been updated from previous Recommendations being implemented, and the changes were not material enough to require further changes. As a result, we are marking the execution of Action 4 as 'Not Executed' and the sustainability of Action 4 as 'Partially Addressed' until such time we can confirm that ASX has presented the changes to their PGG for endorsement and sign off. EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.		

Outcome from Q3 Re-evaluation	Fully Addressed
Comment	This Recommendation is now fully addressed. ASX has provided evidence that on 29 June 2022, an email was distributed to the members of the PGG, notifying them that a review had been performed on the criteria for assessing P1, P2 and P3 projects, and the criteria in the PRA for assessing high, medium and low risk projects, and seeking their endorsement on the updates. All PGG members provided their acknowledgement of the changes and sign-off via email. ASX has provided a copy of each of the sign-off emails from the PGG members.

* Considered complete as not applicable for this specific action

1.3.6 - Identify project risks using techniques to get diverse views

1. Project Risk Specialist to be recruited (New Hire) to define and manage the Enterprise Project Management Framework, templates, practices, controls and metrics
2. Update the following policies/documents to include this concept:
   - Enterprise Risk Management Framework (ERMF)
   - Enterprise Project Risk Management Framework (EPRMf)
   - Project Risk & Issues Management framework (PRIMf)
   - Risk Champions guidance note
3. Update the Expectations of Line 2 on PSGs document to include this concept
4. Include as a topic of discussion in the Risk culture and awareness short and long term education session in response 1.1.1-2

Outcome from Q2	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
ASX Action 4	✔	✔	✔
Recommendation Addressed?	Partially		

Comment	This recommendation has been largely closed with the actions conducted to date.

While ASX has stated they will be including this topic for discussion in the Risk Culture and Awareness short and long-term education sessions under Recommendation 1.1.1-2 (due in June 2022), this training has not been completed. As a result, we are marking the execution and sustainability of ASX Action 4 as 'Partially Addressed' until such time we can confirm that ASX has completed the long-term training sessions due in June 2022.

EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews. |
| **Outcome from Q3 Re-evaluation** | **Fully Addressed** |
| **Comment** | This Recommendation is now fully addressed. ASX conducted a series of 10 long-term trainings in June 2022, which included the introduction and demonstration of the Delphi Technique. ASX has provided a confirmed schedule for the long-term training sessions to be held over the next 12 months (up to June 2023), which comprises of quarterly face-to-face and virtual sessions. |

ASX has stated in their June 2022 report that the final Partially Addressed Recommendation (6.4.8) will be re-submitted during the September 2022 quarterly reporting period for re-evaluation.

For an overview of the status of each of the fifty-nine (59) Recommendations, please refer to Appendix E.

3.2   Design Adequacy Report

The objective of this section is to monitor the status of the recommendations we made as the IE in our Design Adequacy Report and determine if they have been addressed by ASX.

In our Design Adequacy Report, we provided four (4) recommendations ("IE Recommendations"), with two (2) relating to the overall 'Program governance and management' by ASX of its Delivery Excellence Program, one (1) relating to the 'Timing of ASX Actions' and one (1) relating to 'Adequacy of ASX Actions'. ASX has submitted responses for all four (4) IE Recommendations in Q3 for assessment and below are the outcomes:

#	IE Recommendation	Status	Date Due
1	**Program governance and management** Articulate Change Management strategy for assessing each Recommendation from an organisational change management perspective including people impact assessments, organisational change impacts, and training on implemented ASX Actions (including resourcing traceability to best ensure training completion is achieved) and communications approach	In Progress	30 June 2022
Outcome	Partially addressed		
Comment	While we can see evidence of Change in the Delivery Excellence Program, the Change Management strategy should have an additional long-term plan with a target audience approach for communication and training in the long term. The shared strategy is very high level, and feasible for the duration of the Delivery Excellence Program. In order for the IE to deem this recommendation fully addressed, a long term strategy is required to assess, plan, and implement Change and ensure the culture of ASX has changed following the closure of the 59 IBM Recommendations. This requires recorded engagement from teams, such as HR and Change Management within ASX, going		

	beyond Project and Risk approach, to change the culture and behaviour of Projects in the future.

#	IE Recommendation	Status	Date Due
2	**Program governance and management** Develop a detailed Program Charter to provide full visibility around the Program	Closed	31 May 2022
Outcome	Fully addressed		
Comment	ASX has created and shared the Delivery Excellence Program Charter with a comprehensive approach and guidance for all audiences and includes relevant links to frameworks and methodologies to guide users to the specific approach they may need. Whilst the Charter does not include a RACI that links to Program stakeholders, it contains a link to the wider 'RASCI matrix' which describes the Roles and Responsibilities of project team members in detail and clarifies the process for escalations and identifying owners.		

#	IE Recommendation	Status	Date Due
3	**Timing of ASX Actions** If ASX does not meet their 80% of closure target by the June 2022 quarterly review, ASX should review carry out a workplan review for corrective action	Closed	31 July 2022
Outcome	Fully addressed		
Comment	ASX's Delivery Excellence Program team has re-assessed their timeline in June 2022 and aligned some Recommendations of a similar nature to be closed within the same quarterly period. The new workplan is sustainable and appropriate to achieve its timeline at present. While some of the future quarters will now have more Recommendations to close compared to the original baseline timeline in the ASX Management Response Plan from		

| August 2021, this should allow ASX more time to properly introduce and embed Recommendations. | Please refer to the Design Adequacy Report to read our detailed findings and commentary. |
| We will continue to monitor ASX's progress in adhering to the new delivery timeframe and share commentary in future quarterly review periods. | |

#	IE Recommendation	Status	Date Due
4	**Adequacy of ASX Actions** Take into consideration of IE findings and recommendations outlined in section 3 of the Design Adequacy Report for IBM Recommendations deemed 'partially addressed'. Consideration should be given to how ASX address these items in a more holistic manner than outlined currently to ensure closure in the relevant quarterly review period. **Note:** This will form as part of the outcome of our IE quarterly review assessments, until the last report in August 2023.	Closed (Ongoing)	30 June 2023
Outcome	**Fully addressed**		
Comment	As part of the Q3 June 2022 submission, ASX has started to include in the 'Summary Consolidation Page' (provided in the Closure Pack for each Recommendation) a section referencing and addressing the IE findings and IE recommendations made in the Design Adequacy Report. This is applicable for IBM Recommendations deemed 'partially addressed' in the Design Adequacy Report as the ASX Actions were only partially adequate to address the IBM Recommendation at that time. ASX has confirmed that the section in the 'Summary Consolidation Page' relating to the IE findings and IE recommendations will be included in all future quarterly reports when applicable (i.e., all 'partially addressed' IBM Recommendations).		

4. Our Findings

Detailed below are our Independent Expert findings following our assessment of the actions taken by ASX as part of their Response Plan to address the IBM recommendations, on whether ASX have taken the adequate steps to close the recommendations.

The following pages provide detailed findings for each of the twelve (12) recommendations submitted by ASX to ASIC and RBA on 14 July 2022 as part of the second quarterly review period.

Summary of Review Recommendations Assessment

Of the twelve (12) Recommendations five (5) were fully addressed. Within the twelve (12) Recommendations there were thirty-seven (37) ASX Actions. Of the thirty-seven (37) ASX Actions, twenty-six (26) were fully completed.

Below is a summarised view of the outcome of each Recommendation and its related ASX Action(s) submitted this quarter (June 2022). For detailed commentary around findings please refer to the following pages.

#	Recommendation / ASX Actions		Executed	Appropriate	Sustainable
1.1.1	**Promote risk aware culture through project delivery cycle**		**Recommendation has been addressed**		

	Action 1	Risk Culture in policy updates. The following policies are to be updated to include special focus on risk culture and awareness in projects:
		• ASX Risk Appetite Statement (RAS)
		    Enterprise Risk Management Framework (ERMF)
		    Expectations of Line on PSGs document
		    Enterprise Project Risk Management Framework (EPRMf)
		    Project Risk & Issues Management framework (PRIMf)
			✔	✔	✔

	Action 2	Risk Culture education • Short term staff education on these issues through sessions with all General Managers and above staff, and anyone involved in a new P1 or high risk project • Longer term staff education through inclusion of this topic in Project Steering Group/Sponsor & Owner induction sessions designed as part of Delivery Excellence program	✔	✔	✔
1.2.2	**Update policy re resource expertise during PRA**		**Recommendation has been addressed**		
	Action 1	See response to 1.2.1	✔	✔	✔
	Action 2	The following policies will be updated to refer to this point: • Enterprise Risk Management Framework (ERMF) • Enterprise Project Risk Management Framework (EPRMf) • Project Risk & Issues Management framework (PRIMf)	✔	✔	✔
	Action 3	Post the PRA, the Sponsor and the CRO will attest that appropriate expertise with relevant risk experience has been involved	✔	✔	✔
1.2.3	**Enhance controls to ensure diverse views at PRA**		**Recommendation has been addressed**		

#		Recommendation / ASX Actions	Executed	Appropriate	Sustainable
	Action 1	The PRA will be performed by all members of the PSG and formally discussed at the PSG. For lower risk projects where there is no PSG, the PRA will be performed by the Sponsor, Owner and core project team	✓	✓	✓
	Action 2	This will also be the case for the ensuring six monthly PRAs	✓	✓	✓
	Action 3	The Process Risk Assessment will also be subject to an equivalent level of diverse input and challenge/scrutiny by the PSG	✓	✓	✓
	Action 4	The EPRM framework will be updated to reflect this	✓	✓	✓
1.2.5	**Expand PRA to cover Delivered risk**		**Recommendation has been addressed**		
	Action 1	Include a 'Delivered Risk' sub category in the Technology and Operations category of the PRA	✓	✓	✓
	Action 2	Specifically discuss this sub-category at PSGs as the semi-annual PRAs are undertaken	✓	✓	✓
	Action 3	Include this as a category in both the Process Risk Assessment and the Implementation Readiness documentation	✓	✓	✓
	Action 4	Include a requirement in the Implementation Readiness template that Delivered Risks are signed off for assessment and ownership in ERICA before a go-live decision can be made	✓	✓	✓
1.3.7	**Update Implementation Readiness document re inherent or residual risk and controls preventive or detective**		**Recommendation has been addressed**		
	Action 1	Introduce the concept of inherent and residual risk and control description into EPRMf and update associated templates including Implementation Readiness template	✓	✓	✓
	Action 2	Update the Expectations of Line 2 on PSGs document to challenge on this concept	✓	✓	✓
	Action 3	Include as a topic of discussion in the Risk culture and awareness short and long term education session in response 1.1.1-2	✓	✓	✓
1.4.1	**Ensure Technical Account Managers document risks and issues raised by customers**		**Recommendation has been partially addressed**		
	Action 1	Technical Account Managers will be provided education on this requirement	✓	✓	✓
	Action 2	ASX Delivery Framework will be updated to include this as a requirement	✓	✓	✓
	Action 3	Project Risk Specialist, Project Assurance Specialist and the Line 2 ERM manager will monitor and challenge on this topic	✓	✓	✓

#	Recommendation / ASX Actions		Executed	Appropriate	Sustainable
3.1.1	At initiation, determine metrics for monitoring progress and adherence with requirements		Recommendation has been partially addressed		
	Action 1	Project Assurance Specialist (New Hire) to be recruited	✓ (green)	✓ (green)	✓ (green)
	Action 2	Define and build (ready for rollout) a Project Assurance Framework that defines project performance metrics and measures (quality)	✓ (green)	✓ (green)	✓ (yellow)
3.2.2	Investigate whether to formalise quality management into delivery process		Recommendation has been partially addressed		
	Action 1	Project Assurance Specialist (New Headcount) to be recruited	✓ (green)	✓ (green)	✓ (green)
	Action 2	Define and Build (ready for rollout) a Project Assurance Framework	✓ (green)	✓ (yellow)	✓ (yellow)
3.2.3	Update policy so that EPMO on PSG for P1 projects		Recommendation has been partially addressed		
	Action 1	Project Assurance Specialist to be recruited within the EPMO to ensure quality and compliance	✓ (green)	✓ (green)	✓ (green)
	Action 2	Metrics and measures will be introduced as part of the Project Assurance Framework (refer 3.2.2) to monitor compliance	✓ (green)	✓ (yellow)	✓ (yellow)
3.2.5	Delivery gaps challenged by PSG, project team and EPMO		Recommendation has been partially addressed		
	Action 1	Project Assurance Framework and metrics / measures will identify any compliance gaps (Refer 3.2.2)	✓ (green)	✓ (yellow)	✓ (yellow)
	Action 2	Project Risk Specialist, Project Assurance Specialist and ERM Line 2 resource will be tasked with challenge	✓ (green)	✓ (green)	✓ (yellow)
6.3.2	Define risk based testing approach		Recommendation has been partially addressed		
	Action 1	Recruit second Test Lead (Methods, Processes, Procedures)	✓ (green)	✓ (green)	✓ (green)
	Action 2	Design and implement an enhanced quality risk assessment and management methodology, aligned to risk-based pathways	✓ (green)	✓ (green)	✓ (green)
	Action 3	Create a standardised quality risk and risk mitigation library aligned with ASX test methodology and techniques	✓ (green)	✓ (green)	✓ (green)
	Action 4	Implement risk based testing methodology with appropriate education and communication	✓ (green)	✓ (green)	✓ (green)
	Action 5	Integrate risk based testing methodology with metrics and reporting provided to QE authority	✓ (yellow)	✓ (yellow)	✓ (yellow)

#	Recommendation / ASX Actions		Executed	Appropriate	Sustainable
6.5.1	Implement defect analysis techniques including linkage to releases, tests, & functions		Recommendation has been partially addressed		
	Action 1	Enhance ongoing defect analysis techniques, including defect leakage, defect modelling and prediction aligned to industry and internal standards and thresholds	✔	✔	✔
	Action 2	Link defect, incident and problem management processes to accurately measure defect leakage	✔	✔	✔
	Action 3	Mandate root cause analysis recording for higher severity defects and derive metrics and commentary	✔	✔	✔
	Action 4	Integrate enhanced defect management processes into QE processes and procedures	✔	✔	✔
	Action 5	Integrate all metrics into QE authority and project reporting	✔	✔	✔

Recommendation 1.1.1: Promote risk aware culture through project delivery cycle

	Executed	Appropriate	Sustainable
ASX Action 1	✓	✓	✓
ASX Action 2	✓	✓	✓
Recommendation Addressed?	Yes		
Comment	Recommendation has been addressed, as evidenced by the findings outlined below. ASX Actions are deemed appropriate and sustainable at the present time.		

Background/Tasks

Enhance the risk aware culture, where risks and issues are freely identified, documented, analysed, managed, and treated appropriately.

ASX Action(s)

1. Risk Culture in policy updates. The following policies are to be updated to include special focus on risk culture and awareness in projects:
   - ASX Risk Appetite Statement (RAS)
   - Enterprise Risk Management Framework (ERMF)
   - Expectations of Line on PSGs document
   - Enterprise Project Risk Management Framework (EPRMf)
   - Project Risk & Issues Management framework (PRIMf)
2. Risk Culture education
   - Short term staff education on these issues through sessions with all General Managers and above staff, and anyone involved in a new P1 or high risk project
   - Longer term staff education through inclusion of this topic in Project Steering Group/Sponsor & Owner

induction sessions designed as part of Delivery Excellence program

Findings

ASX Action 1:

Following the recommendation, ASX reviewed the existing relevant policies and documents to ensure that a special focus on risk culture and awareness in projects was included, and where it wasn't included, made updates where appropriate. ASX has provided evidence that the following artefacts include a focus on risk culture and awareness:

- **ASX Risk Appetite Statement (RAS)**
  - Describes the principles of risk culture and how ASX people respond to risks
  - Page 5, section titled 'Risk and Compliance Culture and its Importance'

- **Enterprise Risk Management Framework (ERMF)**
  - Describes principles of risk culture
  - Page 15, section titled 'Risk and Compliance Culture'

- **Expectations of Line on PSGs document**
  - Describes the role and contribution of Line 2 ERM resources in promoting ASX risk culture
  - Page 1, second paragraph
  - Page 2, section titled 'Other Activity', first bullet point under the title 'Risk aware culture and awareness'

- **Project Risk Management Framework (PRMF)**
  - A single framework consolidated of the 'Enterprise Project Risk Management Framework (EPRMf)' and 'Project Risk & Issues Management framework (PRIMf)' mentioned in the Recommendation
  - Changes were made in December 2021 and highlights the importance of understanding and leading ASX risk culture

- Section titled 'Introduction', second bullet point of 'Objectives'

ASX has also created a document titled 'Promoting a culture of risk awareness, accountability and speaking up – A guide for General Managers' to promote risk culture and awareness at ASX. This is available from the Enterprise Risk Management (ERM) site.

ASX states in their 'Summary Consolidation Page' provided as part of the closure pack for Recommendation 1.1.1, that *'on completion of the initial Risk Culture Training sessions conducted in June 2022 the training content ownership has been handed over to the Senior Manager; Project Risk Management to maintain the content and promote the ongoing engagement with lines of business for any resources who require this training, be they; new starters to ASX, existing ASX resources new to a project, newly appointed project sponsors and owners, consultants engaged for involvement in delivery activity or individuals looking to refresh themselves, etc.'* ASX has provided evidence that future face-to-face and virtual sessions have been scheduled over the next 12 months (up to June 2023) for new starters and staff who missed the initial training sessions.

Additionally, ASX's CRO mandates for all ASX staff members to complete a 'Risk Appetite' training module and '3 Lines of Defence' training module annually, to further deliver the message of risk culture and awareness throughout ASX.

ASX Action 2:

ASX has conducted both short-term staff education and long-term staff education to promote risk culture and awareness.

As part of their short-term staff education, ASX delivered 3 tactical training sessions in December 2021 to highlight and uplift the visibility and awareness of risk management and its relationship to governance. One session was delivered to ASX board members, and the other two sessions were delivered to ASX Project Sponsors, Owners and PM's involved in P1 and High-Risk Projects, plus any other identified stakeholders. The sessions were held virtually, recorded and mandatory for all the stakeholders ASX identified needed to attend the training. For

staff who could not attend the session (i.e., not on the attendance report), ASX required for them to watch the session recordings and provide attestation that they had completed the training.

As part of their long-term staff education, ASX conducted 10 face-to-face classroom sessions in June 2022 to highlight a number of changes that had occurred to improve ASX risk management and raise awareness of ASX risk culture. These sessions were facilitated by an L&D specialist with subject matter expertise delivering the content to a wide range of ASX stakeholders, including Project Sponsors, Project Owners, Delivery Managers, Program Managers, Project Managers, Business Analysts, CaDE, EPMO and Line 2. EY SMR(s) attended and observed the launch session held on 16 June 2022.

Additionally, as stated in the Findings for ASX Action 1, all ASX staff members are required by the CRO to complete the annual mandatory training modules on 'Risk Appetite' and '3 Lines of Defence' to better understand risk culture and awareness at ASX.

During the Recommendation Review Workshop held on 26 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendation 1.1.1), ASX stated that the long-term risk culture training is their strategic solution, and will be available to new joiners, anyone transitioning into a new role (e.g., Project Sponsor, Project Owner) or anyone who wants a refresher. These sessions are mandatory for key project roles and part of the onboarding program.

ASX has provided a confirmed schedule for the long-term training sessions to be held over the next 12 months (up to June 2023), which comprises of quarterly face-to-face and virtual sessions. The scheduling and running of future sessions will be the responsibility of the project risk capability owner i.e., Project Risk Specialist.

Furthermore, ASX has introduced a participant workbook (reference materials) to be distributed to attendees at all future risk training sessions to help them better understand risk concepts and definitions. Survey results are also collected at the end of each session for continuous improvement.

ASX Action(s) update Communication Log:

Channel	Description	Date
IBM Tactical Training Sessions	A series of virtual Risk Culture Training sessions held in December 2021 for project delivery community	December 2021
Blog Post on Confluence	Blog post on Introducing Delphi Technique Concept	25/03/2022
Blog Post on Confluence	Blog post on Updated and expanded scope of PRA template	30/05/2022
Blog Post on Confluence	Blog post on New JIRA Issue Type to perform BPRA	30/05/2022
Blog Post on Confluence	Blog post on Enhanced PRA, BPRA and IRA control framework	30/05/2022
Blog Post on Confluence	Blog post on Updated Implementation Readiness Assessment template	30/05/2022
Blog Post on Confluence	Blog post on Introduced new risk classification and levels to IRA template and supporting guidance	30/05/2022
Blog Post on Confluence	Updated Project Risk Management RASCI	30/05/2022
Outlook Email	Email sent to update on May ASX Delivery NS Project Risk Management Framework changes	31/05/2022
Risk Culture Training Sessions	A series of face-to-face Risk Culture Training sessions held throughout June 2022 for project delivery community	June 2022

Recommendation 1.2.2: Update policy re resource expertise during PRA

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
Recommendation Addressed?	Yes		
Comment	Recommendation has been addressed, as evidenced by the findings outlined below. ASX Actions are deemed appropriate and sustainable at the present time.		

Background/Tasks

Update the necessary policies to ensure that at project initiation and especially during the Project Risk Assessment phase, resources with relevant risk expertise should be involved to leverage their diverse expertise.

ASX Action(s)

1. *See response to 1.2.1*
   - *A new Senior Manager, Enterprise Risk Management will be recruited to be the Line 2 representative on P1 and/or high risk projects (excluding CHESS)*
   - *Post the PRA, the Sponsor and the CRO will attest that appropriate expertise for Line 2 challenge is available*
   - *Review the current Expectations of Line 2 on PSGs documentation*
2. The following policies will be updated to refer to this point:
   - Enterprise Risk Management Framework (ERMF)
   - Enterprise Project Risk Management Framework (EPRMf)
   - Project Risk & Issues Management framework (PRIMf)

3. Post the PRA, the Sponsor and the CRO will attest that appropriate expertise with relevant risk experience has been involved

Findings

ASX Action 1:

This activity has been addressed as part Recommendation 1.2.1, submitted in the first quarterly review (Q1 January 2022).

Refer to Findings section for Recommendation 1.2.1 from the first quarterly IE report *(ASX Independent Assessment of IBM Recommendations Review_FINAL)* for details.

Refer to section 3 titled '3. Monitoring of Partially Addressed Recommendations and ASX Actions' of this report for an update on the partially addressed items for Recommendation 1.2.1 submitted in the first quarter.

During the Recommendation Review Workshop held on 27 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendations 1.2.2, 1.2.3, 1.2.5, 1.3.7 and 1.4.1), ASX confirmed they currently have sufficient Line 2 resources for P1 and high risk projects. As part of their re-submission for Recommendation 1.2.1, ASX has introduced an attestation statement process for all new projects which requires them to look at the capacity and availability of Line 2 resources to be applied to projects. The Chief Risk Officer and Project Sponsor then approves the attestation.

ASX Action 2:

Note: ASX states in their 'Summary Consolidation Page' provided as part of the closure pack for Recommendation 1.2.2, that the 'Enterprise Project Risk Management Framework (EPRMF)' and 'Project Risk & Issues Management Framework (PRIMF) has been consolidated into a single 'Project Risk Management Framework (PRMF)'.

ASX has provided evidence that they have updated the following artefacts to include the requirement that at project initiation, especially during the Project Risk Assessment activity (Define and Plan phase),

resources with relevant risk experience should be involved to leverage their diverse expertise:

- **Enterprise Risk Management Framework (ERMF)**

    - Page 11, section 5.6 'Project Risk Management'
    - In the stages and L1 and L2 roles summary table under 'Development plan to PGG, initial funding stage', added under Line 2 role to 'ensure resources with relevant expertise are involved in assessment of risks'

- **Guidance for Line 2 on Project Risk Governance document**

    - Included as part of guidance and expectations of Line 2, that they need to confirm:

        - whether resources with relevant expertise have been involved in assessment of project risks
        - whether resources with relevant subject matter expertise have been involved in assessment of process impacts
        - work closely with Project Managers, Project Owner, SMEs and management to establish that relevant risk expertise is embedded within priority projects to make sure an alternative and independent viewpoint is consistently applied in assessment of relevant project risks

- **Project Risk Management Framework (PRMF)**

    - Under 'Role and Responsibilities (Three Lines of Defence)' section, includes 'Roles and Responsibility' table defining the 'Project Risk Management Specialist' role as:

        - Responsible for the Project Risk Management Framework and associated processes, tools and templates (part of the overall PM Framework), & uplift of Project Risk Management across the Portfolios

    - Provide advice and support through the Project Risk Management Life cycle i.e., identification, assessment, treatment and reporting of project risk
    - Challenge and review on the project and portfolio risk levels

- Under 'How to engage the Line 2 Enterprise Risk Management (ERM) team' heading, includes points that:

    I. All project teams must have an initial meeting with ERM in the 'Define & Plan' phase to agree on a meeting cadence for the project duration. Only P1 and projects that have a high risk rating resulting from the project risk assessment must have an ERM Line 2 representative assigned, with other projects based on ERM team capacity

    II. Establish recurring meetings with the Line 2 representative (e.g., monthly PM, Owner & Line 2 representative meeting pre-SGG)

    III. Provide links to Risks & Issues logs. The ERM team then reviews, challenges, and provides feedback on risk ratings and mitigation strategies (e.g., accept, transfer, avoid, reduce)

- Links to 'Risk Management RASCI Matrix' page which provides a summary overview of the responsibilities and tasks each role needs to perform at a particular stage of the project delivery lifecycle

- Links to 'Delphi Technique Guide for Projects' page (step by step guide) which introduces the concept of Delphi Technique to be applied to risk assessment when uncertainty exists, and expert and diverse judgement is needed. The Delphi technique was also introduced to assist in reducing bias and group think. ASX offers the Delphi technique as a risk identification technique to be

applied when projects complete their Project Risk Assessments to ensure diverse views are considered

Additionally, ASX has an existing 'BTOPPC (Business Vision and Strategy, Technology & Services, Organisation & Roles, Processes and Procedures, People & Culture, and Customer Experience) Assessment' template which is mandated to be used to identify relevant stakeholders across all of ASX to act as subject matter experts and contribute to risk management throughout a project lifecycle.

ASX Action 3:

This activity has been addressed as part Recommendation 1.2.1, submitted in the first quarterly review (Q1 January 2022).

Refer to Findings section for Recommendation 1.2.1 from the first quarterly IE report *(ASX Independent Assessment of IBM Recommendations Review_FINAL)* for details.

Refer to section 3 titled '3. Monitoring of Partially Addressed Recommendations and ASX Actions' of this report for an update on the partially addressed items for Recommendation 1.2.1 submitted in the first quarter.

During the Recommendation Review Workshop held on 27 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendations 1.2.2, 1.2.3, 1.2.5, 1.3.7 and 1.4.1), ASX confirmed they currently have sufficient Line 2 resources for P1 and high risk projects. As part of their re-submission for Recommendation 1.2.1, ASX has introduced an attestation statement process for all new projects which requires them to look at the capacity and availability of Line 2 resources to be applied to projects. The Chief Risk Officer and Project Sponsor then approves the attestation.

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Blog post on Introducing Delphi Technique Concept	25/03/2022
Outlook Email	FW: FYI - March ASX Delivery Framework changes	29/03/2022
Blog Post on Confluence	Updated Project Risk Management RASCI	30/05/2022
Outlook Email	For your attention: May ASX Delivery and Project Risk Management Framework changes	31/05/2022

Recommendation 1.2.3: Enhance controls to ensure diverse views at PRA

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
ASX Action 4	✔	✔	✔
Recommendation Addressed?	Yes		
Comment	Recommendation has been addressed, as evidenced by the findings outlined below. ASX Actions are deemed appropriate and sustainable at the present time.		

Background/Tasks

Enhance the control framework to ensure that there are suitable controls, alternative and independent viewpoints during the Project Risk Assessment template completion exercise and/or after the template completion by the project teams. This will add alternative diverse viewpoints and also is a means to the challenge the team's rationale. Consider the use of the Delphi technique to independently complete the form, and use the average output or use the range, to reduce risk of group think. This is also relevant to the Process Risk Assessment exercise.

ASX Action(s)

1. The PRA will be performed by all members of the PSG and formally discussed at the PSG. For lower risk projects where there is no PSG, the PRA will be performed by the Sponsor, Owner and core project team
2. This will also be the case for the ensuring six monthly PRAs

3. The Process Risk Assessment will also be subject to an equivalent level of diverse input and challenge/scrutiny by the PSG
4. The EPRM framework will be updated to reflect this

Findings

ASX Action 1:

ASX has created an end-to-end risk management RASCI Matrix (Risk Management RASCI Matrix) under their 'Project Risk Management Framework' on their Confluence site, to clearly define the roles and responsibilities of all team members at each project phase.

In the RASCI Matrix, ASX indicates that as part of the 'Complete Project Risk Assessment (PRA)' task (including the six monthly PRA mandatory requirement) under the 'Define and Plan' phase:

- 'Project/Product Owner and/or Project Sponsor' is 'Accountable/Consulted'

- 'Strategic Governance Group (SGG) Members' are 'Consulted' (PSG is referred to as 'SGG (Strategic Guidance Group)' at ASX)

The matrix also states that for the task 'Six monthly Project Risk Assessment is discussed and confirmed at the SGG', 'Project/Product Owner and/or Project Sponsor' is 'Accountable /Consulted' and 'Strategic Governance Group (SGG) Members' are 'Consulted'. Under the 'Roles and Responsibilities' section, ASX explicitly states that one of the tasks SGG Members need to do is perform PRA.

In terms of lower risk projects where there is no SGG, the RASCI matrix clearly shows that 'Project/Product Owner and/or Project Sponsor' is 'Accountable /Consulted'.

As part of Recommendation 1.3.6 submitted by ASX in March 2022 (second quarterly review), ASX introduced the concept of Delphi Technique to be applied to risk assessment when uncertainty exists, and expert and diverse judgement is needed. The Delphi technique was also introduced to assist in reducing bias and group think. ASX offers the Delphi technique as a risk identification technique to be applied when

projects complete their Project Risk Assessments to ensure diverse views are considered. A 'Delphi Technique Guidance for Projects' section (step by step guide) is available under the Project Risk Management Confluence site for project teams to follow and learn more about the Delphi technique.

In Recommendation 1.1.1 (also submitted this quarter (Q3) for closure), ASX held a series of face-to-face training sessions to raise risk culture awareness across an audience made up of Project Sponsors, Project Owners, Delivery Managers, Program Managers, Project Managers, Business Analysts, CaDE, EMPO and Line 2 Risk. As part of the training session, one of the interactive activities was using the Delphi Technique to independently complete the Project Risk Assessment template in order to capture diverse viewpoints.

ASX has stated in their 'SGG Terms of Reference' template that the responsibilities of the SGG includes:

- Removing blockers, and actively providing guidance on escalated Risks and Issues (as per RAID Register set up in Jira)
    - *Note:* Active discussion of Risks and Issues is a mandatory agenda item for the SGG
- Discussing and confirming six monthly Project Risk Assessment at the SGG with all risks identified to be tracked and managed as a record in Jira
- Discussing and confirming Business Process Risk Assessment at the SGG with all risks identified to be tracked and managed as a record in Jira

ASX Action 2:

As stated in the Findings for ASX Action 1, the 'Project/Product Owner and/or Project Sponsor' is 'Accountable /Consulted' and 'Strategic Governance Group (SGG) Members' are 'Consulted' for both the initial PRA (done at the beginning of a project) and subsequent mandatory six-monthly PRAs.

See Findings for ASX Action 1 for details.

ASX Action 3:

In the RASCI Matrix, ASX states that as part of the 'Completion of Business Process Risk Assessment' task under the 'Refine and Implement' phase:

- 'Project/Product Owner and/or Project Sponsor' is 'Accountable/Consulted'
- 'Strategic Governance Group (SGG) Members' are 'Consulted'

This indicates that the equivalent level of contribution will be made by the SGG members for the completion of the Business Process Risk Assessment as they would for the Process Risk Assessment.

See Findings for ASX Action 1 for details on Delphi Technique as part of risk identification and responsibilities of the SGG.

ASX Action 4:

Note: ASX states in their 'Summary Consolidation Page' provided as part of the closure pack for Recommendation 1.2.3, that the 'Enterprise Project Risk Management Framework (EPRMF)' is now known as the 'Project Risk Management Framework (PRMF)'.

ASX has provided evidence that the PRMF has been updated to reflect the new requirement through the implementation of ASX Actions 1,2 and 3. The updates to the PRMF include:

- **Risk Management RASCI Matrix**

    - Defines the roles and responsibilities of all team members at each project phase, and shows that 'Project/Product Owner and/or Project Sponsor' is 'Accountable/Consulted' and 'Strategic Governance Group (SGG) Members' are 'Consulted' for completion of the PRA and Process Risk Assessment

- **How to Perform Project Risk Assessment**

    - Step by step guide on how to perform a PRA, including a section on how to apply the Delphi Technique to identify risks

- States that PRA will be performed by all members of the SGG and formally discussed at the SGG. For lower risk projects where there is no SGG, the PRA will be performed by the Sponsor, Owner and core project team

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Updated Project Risk Management RASCI	30/05/2022
Blog Post on Confluence	Enhanced PRA, BPRA and IRA control framework	30/05/2022
Blog Post on Confluence	Updated and expanded scope of PRA template	30/05/2022
Blog Post on Confluence	New JIRA Issue Type to perform BPRA	30/05/2022
Outlook Email	For your attention: May ASX Delivery and Project Risk Management Framework changes	31/05/2022

Recommendation 1.2.5: Expand PRA to cover Delivered risk

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
ASX Action 4	✔	✔	✔
Recommendation Addressed?	Yes		
Comment	Recommendation has been addressed, as evidenced by the findings outlined below. ASX Actions are deemed appropriate and sustainable at the present time.		

Background/Tasks

Expand the scope of the Project Risk Assessment template to consider both delivery risk and the future delivered risk, to also include the transition/migration/cut-over risks.

ASX Action(s)

1. Include a 'Delivered Risk' sub category in the Technology and Operations category of the PRA
2. Specifically discuss this sub-category at PSGs as the semi-annual PRAs are undertaken
3. Include this as a category in both the Process Risk Assessment and the Implementation Readiness documentation
4. Include a requirement in the Implementation Readiness template that Delivered Risks are signed off for assessment and ownership in ERICA before a go-live decision can be made

Findings

ASX Action 1:

ASX has updated their Project Risk Assessment (PRA) template to include a 'Delivered Risk' sub-category in all the categories, including 'Technology' and 'Operational'. The 'Delivered Risk' sub-category is listed under Column O, 'Guidance', and is designed to identify whether a risk criterion is a 'Delivered Risk' sub-category or 'Delivery Risk' sub-category within the PRA.

Under the 'Release Management' risk category, ASX has included the 'Transition/Migration/Cutover' criteria in the PRA with the below risk scoring guidance:

- **High (5-4):** Significant number of systems migration, complex data migration or external and Internal impact on customer
- **Medium (3-2):** High number of systems migration, complex data migration or external and Internal impact on customer
- **Low (1); Not Applicable (0):** Low number of systems migration, complex data migration or external and Internal impact on customer

The PRA template is mandatory for all projects to complete in the 'Define and Plan' project phase and this new updated template is currently being used at ASX.

ASX Action 2:

As stated in the Findings for Recommendation 1.2.3, ASX Action 1, the responsibilities of the SGG includes:

- Removing blockers, and actively providing guidance on escalated Risks and Issues (as per RAID Register set up in Jira)
    - *Note:* Active discussion of Risks and Issues is a mandatory agenda item for the SGG
- Discussing and confirming six monthly Project Risk Assessment at the SGG with all risks identified to be tracked and managed as a record in Jira

- Discussing and confirming Business Process Risk Assessment at the SGG with all risks identified to be tracked and managed as a record in Jira

Please note that PSG is referred to as 'SGG (Strategic Guidance Group)' at ASX.

ASX Action 3:

At ASX, the Business Process Risk Assessment (BPRA or Process Risk Assessment) is completed online using Jira Issue templates. ASX has updated Jira to include 'Delivered Risk' as a Jira Issue Type, in order to capture delivered risk.

In the Project Risk Management Framework, ASX has included a section titled 'Identify, Assess and Treat Risk' with a sub-section 'How to Perform Delivered Risk Assessment', which states that *"delivered risk is identified, assessed, treated and monitored by performing a documented Business Process Risk Assessment (BPRA)"*.

ASX also included a sub-section titled 'How to Perform Implementation Readiness Assessment', which states that the *"Implementation Readiness Assessment is completed in the Implement Phase before any Implementation (go live) occurs. The plan assesses the risks of go live and the initial period (varies depending upon the project size and complexity) post go live."* As part of the Implementation Readiness Assessment, the project needs to complete the Implementation Readiness Assessment template.

ASX has updated the Implementation Readiness Assessment template to include:

- Section titled '3.4.1 Implementation Risks'
  - table to capture the risks related to implementation, including delivery risks related to transition, migration and cutover that have been recorded during the project lifecycles and logged in Jira
- Section titled '3.4.2 Delivered Risks'
  - table to capture delivered risks

ASX Action 4:

As stated in ASX Action 3, ASX has updated the Implementation Readiness Assessment template to include a section titled '3.4.2 Delivered Risks' to capture delivered risks.

Additionally, ASX has explicitly stated in the section that:

- Any new business risk being introduced, or any existing business risk modified, as a result of go-live must signed off for assessment and ownership in ERICA (ASX's Governance, Risk Compliance (GRC) tool) before a go-live decision
- All delivered risks must have an ERICA Status of "Approved" before a go-live decision can be made
- Approved related to Jira Status as "Accepted by owner"
- Evidence that delivered risk is accepted by owners is demonstrated by extracting Jira Implementation Risk Register

The above is also stated under the 'How to Perform Implementation Readiness Assessment' sub-section of the Project Risk Management Framework.

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Updated Implementation Readiness Assessment template	30/05/2022
Blog Post on Confluence	New JIRA Issue Type to perform BPRA	30/05/2022
Blog Post on Confluence	Updated and expanded scope of PRA template	30/05/2022
Blog Post on Confluence	Introduced new risk classification and levels to IRA template and supporting guidance	30/05/2022
Outlook Email	For your attention: May ASX Delivery and Project Risk Management Framework changes	31/05/2022

Recommendation 1.3.7: Update Implementation Readiness document re inherent or residual risk and controls preventive or detective

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
Recommendation Addressed?	Yes		
Comment	Recommendation has been addressed, as evidenced by the findings outlined below. ASX Actions are deemed appropriate and sustainable at the present time.		

Background/Tasks

Update the implementation readiness templates and supporting guidance, such that the risks in the implementation readiness document clearly highlights whether they are inherent or residual in nature. The likelihood and impact assessment should be noted, to produce the risk rating. Controls/treatments should be tagged clearly as whether having been performed (preventative) or actions to take should an event occur (detective / corrective). In addition, the listed risks should have lineage to the project risk register.

ASX Action(s)

1. Introduce the concept of inherent and residual risk and control description into EPRMf and update associated templates including Implementation Readiness template
2. Update the Expectations of Line 2 on PSGs document to challenge on this concept

3. Include as a topic of discussion in the Risk culture and awareness short and long term education session in response 1.1.1-2

Findings

ASX Action 1:

Note: ASX states in their 'Summary Consolidation Page' provided as part of the closure pack for Recommendation 1.3.7, that the 'Enterprise Project Risk Management Framework (EPRMF)' is now known as the 'Project Risk Management Framework (PRMF)'.

ASX has updated the Project Risk Management Framework to include a section titled 'Section 1: Project Risk Management Fundamentals' and sub-sections titled 'Section 1.1 Project Risk Classification' and 'Section 1.2 Risk Levels'.

Under 'Section 1.1 Project Risk Classification' of the framework, ASX states that internal and external business initiatives are delivered as change activities by Projects, and provides definitions of the two risk types the 'Project Risks' are classified as:

- **Delivery Risk**
  - Any risks that threaten the execution/delivery objectives of a project or change initiative in terms of activities relating to scope, schedule and financial management, vendor management, risk management and/or benefits realisation

- **Delivered Risk**
  - Any new business risk being introduced, or any existing business risk modified by a change, that will have a material impact on the risk profile of a Business Unit and/or the wider organisation
  - 'Delivered' risks are those delivered into the business and will be owned and managed by the business as part of Business As Usual

- The project may deliver solutions (technical or operational) to reduce delivered risk before the project is completed

In 'Section 1.2 Risk Levels', ASX introduces and defines the concepts of 'Inherent Risk' and 'Residual Risk', as well as defining 'Controls/Mitigation Actions', as per below:

- **Inherent Risk**

  - Determined with reference to an assessment of likelihood and impact, and is defined as the risk arising in the inherent environment before consideration of controls
  - Risk likelihood and impact is calculated using risk scalar

- **Controls/Mitigation Actions**

  - Controls take the form of people, systems, processes and activities, as well as business culture and conduct and are generally either preventative, detective or corrective in nature. These control types are generic and are applied to Delivery and Delivered Risk Classifications
  - **Preventative Controls / Action** aim to reduce the likelihood of a risk event occurring, and are active/in place prior to a risk event occurring (e.g., supervisory authorisation of payment prior to transfer of funds)
  - **Detective Controls / Actions** aim to identify failures in the current control environment, and are active after a risk event may have occurred (e.g., bank reconciliations to detect unauthorised or unaccounted payments)
  - **Corrective Controls / Actions** aim to reduce the impact and/or rectify a failure after discovery (e.g., disaster recovery, insurance)

- **Residual Risk**

  - Residual risk is determined with reference to an assessment, after considering the design and effectiveness of current controls

- Risk likelihood and impact is calculated using risk scalar

ASX also introduces the equation relationship between Inherent Risk, Residual Risk and Controls/Mitigation Actions:

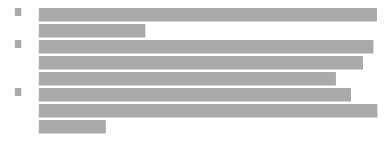**Inherent Risk + Controls/Mitigation Actions = Residual Risk**

Inherent and residual risk is tracked by the project, and is also part of the Project Risk Assessment, Business Process Risk Assessment and Implementation Readiness Assessment.

ASX has shown evidence that the associated templates have been updated to incorporate the new requirements for projects in regard to capturing risks:

- **Project Risk Assessment (PRA) template**

- **Business Process Risk Assessment (BPRA) template**

- **Implementation Readiness template**

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ASX Action 2:

ASX has updated the document titled 'Guidance for Line 2 on Project Risk Governance' to explicitly include as part of the expectation and responsibility of Line 2 for 'Implementation Readiness', that Line 2 confirms whether inherent risks, mitigating controls and subsequent residual risks have been assessed and documented appropriately, where appropriate assessment forums reached a consensus of experts on the subject area (e.g., 'Delphi' technique to help reduce bias and group think).

Additionally, in the 'SGG Terms of Reference' template, ASX has included a section titled 'Members and Responsibilities'. Under the role of 'Enterprise Risk Representative (P1 & high risk Projects)', ASX states that the role is responsible for 'Reviews, challenges and provides feedback on inherent and residual risk ratings and the risks mitigation/control strategies (e.g. accept, transfer, avoid, reduce)'.

ASX Action 3:

This activity has been addressed as part Recommendation 1.1.1, ASX Action 2. Refer to Findings section for Recommendation 1.1.1 for details.

ASX Action(s) update Communication Log:

Channel	Description	Date
Outlook Email	Email from CRO to Enterprise Risk and Enterprise Compliance teams on 'Expectations of Line 2 on projects'	27/10/2021
Blog Post on Confluence	Introduced new risk classification and levels to IRA template and supporting guidance	30/05/2022
Outlook Email	For your attention: May ASX Delivery and Project Risk Management Framework changes	31/05/2022

Recommendation 1.4.1: Ensure Technical Account Managers document risks and issues raised by customers

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While ASX has stated that the Project Risk Specialist, Project Assurance Specialist and the Line 2 ERM Manager will monitor and challenge on this topic, ASX has only been able to provide evidence of how the Project Risk Specialist and Line 2 ERM Manager roles have done so. They have not yet been able to provide evidence of how the Project Assurance Specialist monitors and challenges on this topic as this is done as part of the project assurance review process which has only recently been rolled out as part of Recommendation 3.1.1 and is currently going through its first iteration, due to be completed in mid-late September 2022. As a result, we are marking the sustainability of ASX Action 3 as 'Partially Addressed' until such time we can confirm that ASX has completed the first iteration of the project assurance activities and the Project Assurance Specialist has reported on the results to the relevant forums, including monitoring and challenging on this topic.		

	EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.

Background/Tasks

Ensure that Technical Account Managers formally document risks and issues from customers/participants so such information can be factored into Executive decision making.

ASX Action(s)

1. Technical Account Managers will be provided education on this requirement
2. ASX Delivery Framework will be updated to include this as a requirement
3. Project Risk Specialist, Project Assurance Specialist and the Line 2 ERM manager will monitor and challenge on this topic

Findings

ASX Action 1:

In the 'Risk Management RASCI Matrix' section under the 'Project Risk Management Framework' on Confluence, ASX has updated the 'Roles and Responsibilities' of Technical Account Managers to include the requirement that 'Customer Account Managers (e.g., Technical Account Managers, Business Development Managers, etc), must formally document risks and issues in conjunction with project managers and other project team members in Jira using the standard templates (whether identified by customers or the project team) and select the appropriate escalation option in the template (e.g., Sponsor/Owner or SGG/PWG) so such information can be factored into planning and decision making.' See Findings for ASX Action 2 for details.

ASX delivered two 30-minute interactive training sessions to the TAMs in December 2021 to ensure they are aware of their role and responsibility.

These sessions were virtual and facilitated by the EPMO Lead, covering the below agenda:

- Overview of current project risk & issue standards
- How risks & issues are captured
- Project Risk (JIRA) vs BAU Risk (ERICA)
- How project risks & issues are escalated for Executive Decision Making
- Walkthrough of creating a risk in Jira

During the Recommendation Review Workshop held on 27 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendations 1.2.2, 1.2.3, 1.2.5, 1.3.7 and 1.4.1), ASX informed that all 4 TAMs attended the session. The training sessions were conducted in real-time and consisted of a walkthrough and navigation of the frameworks, guidelines and Jira tool. The training was focused on practical application of the theory in the frameworks, and the content was also included in the longer-term risk awareness culture training sessions in June 2022.

Additionally, during the Q1 Recommendations Review Workshop 'ASX Remedial Actions – Review of Recommendations 1.2.1, 2.1.1 & 2.1.2' for Recommendation 1.2.1, ASX explained that Technical Account Managers (TAMs) are members of the project team who help act as the liaison between the project and the customers, and they are given the same training and user guides on how to manage risks and issues along with everyone else on the project. The TAMs were specifically called out by IBM as it seemed that they sat outside of the project team.

ASX Action 2:

ASX has created a page titled 'Risk Management RASCI Matrix' under the 'Project Risk Management Framework' on Confluence, which includes an end-to-end risk management RASCI Matrix. The RASCI Matrix provides a summary overview of the responsibilities and tasks each role needs to perform at a particular stage of the project delivery lifecycle.

ASX has stated in their 'Summary Consolidation Page' provided in the closure pack for Recommendation 1.4.1, that 'Support/Operations' roles include 'Support, Operations and Customer Account Managers', and recognises TAMs as Customer Account Managers. ASX has updated the

'Roles and Responsibilities' table on the 'Risk Management RASCI Matrix' Confluence page, and explicitly states that the responsibility of the 'Support/Operations/Customer Account Managers' is per the below:

- Business Unit Technology and Operation Support who are engaged by project

- Customer Account Managers (e.g., Technical Account Managers, Business Development Managers, etc), must formally document risks and issues in conjunction with project managers and other project team members in Jira using the standard templates (whether identified by customers or the project team) and select the appropriate escalation option in the template (e.g., Sponsor/Owner or SGG/PWG) so such information can be factored into planning and decision making

Additionally, under the 'Roles and Responsibilities' table, ASX have indicated the relationships of TAMs (Customer Account Managers) with other project roles as per the below:

- **Project/Product/Domain Owner/Sponsor**

  Responsibility involving TAMs:

  - Addressing and making necessary decisions on any escalated Delivery risks and issues, including customer/participant risks and issues raised by Customer Account Managers (e.g., Technical Account Managers, Business Development Managers, etc) to ensure customer impacts are considered early

- **Project Manager/Delivery Manager/SCRUM Master**

  Responsibility involving TAMs:

  - Determining which risks and issues should be escalated, including ensuring customer/participant risks and issues escalated by Customer Account Managers (e.g., Technical Account Managers, Business Development Managers, etc) are appropriately represented to

facilitate decision making (e.g., to Sponsor/Owner or SGG for P1 & High Risk projects)

ASX Action 3:

ASX has recruited a new Senior Project Risk Specialist for their Enterprise Risk Management space, who started on 1 February 2022.

During the recruitment process, ASX included as part of the 'Position Description' that the position would be *"responsible for supporting the Enterprise Risk Management (ERM) framework and strategy, specifically providing Line 2 risk expertise, oversight and challenge to high priority projects in the ASX delivery portfolio"* as well as *"working closely with line 1 business SMEs, project sponsors, project managers, General Managers and Executive Management to ensure appropriate governance, challenge, risk management rigour, reporting, and education is in practice across delivery of all priority projects."*

As part of Recommendation 3.1.1 (and other related Recommendations), ASX has built and implemented a new Project Delivery Assurance Framework (PDAf) which describes the purpose and contribution the assurance activity undertaken by the Project Assurance Specialist will have. ASX states that the Project Assurance Specialist will monitor how risks involved in planning, delivering and managing projects are being managed.

In the document titled 'Guidance and expectations of Line 2 for priority 1 and high risk projects', it includes as part of the role for the Line 2 ERM Managers, that they need to monitor whether risks identified by TAMs and risks identified by customers are being considered as part of the Project Risk Assessment (PRA) and Process Risk Assessment, and during Implementation Readiness.

ASX has included in the PRA template the 'Customer' risk category (under PRA category 'Technology') to ensure that customer risks are being captured and a topic for challenge.

In their written response from 2 August 2022, ASX provided evidence of the Project Risk Specialist and the Line 2 ERM manager monitoring the risks and issues raised by TAMs in the PRA and challenging on what has been raised through asking questions.

ASX Action(s) update Communication Log:

Channel	Description	Date
MS Teams Meeting	Updates to project risk & issue reporting and escalations	15/12/2021
MS Teams Meeting	Updates to project risk & issue reporting and escalations (session 2)	16/12/2021
Outlook Email	Email sent following training session with key links for attendees 'Follow-up: Risk & Issue reporting / escalations re: TAM - Key Links'	16/12/2021
Blog Post on Confluence	Launch - Project Delivery Assurance Framework	20/06/2022
Outlook Email	Project Delivery Assurance Framework Launch	22/06/2022

Recommendation 3.1.1: At initiation, determine metrics for monitoring progress and adherence with requirements

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. While ASX has built a Project Delivery Assurance Framework (PDAf) that defines project performance metrics and measures at the beginning of project initiation, this has been rolled out recently and is their first iteration of the assurance process, due to finish by mid-late September 2022. As a result, we are marking the sustainability of ASX Action 2 as 'Partially Addressed' until such time we can confirm that ASX has completed the first iteration of the project assurance activities and reported on the results to the relevant forums. EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.		

Background/Tasks

At project initiation, formally determine metrics that are carried over, and tracked during project delivery defining the boundaries of operation. Examples include financial variance, product quality, business outcomes, risks, productivity, delivery quality, earned value, customer satisfaction and schedule.

ASX Action(s)

1. Project Assurance Specialist (New Hire) to be recruited
2. Define and build (ready for rollout) a Project Assurance Framework that defines project performance metrics and measures (quality)

Findings

ASX Action 1:

ASX has recruited a new Senior Project Assurance Specialist who started on 26 April 2022. Prior to this permanent appointment, the role was filled internally for an interim from 8 November 2021 until the new recruit started.

During the recruitment process, ASX included as part of the 'Position Description' that the position *"will be directly responsible for providing and embedding Project Assurance capabilities across the delivery portfolio including the Framework and associated policies, processes, tools, templates and performance metrics / reporting of project assurance across the Lines of Business and at an enterprise level."*

ASX Action 2:

During the Recommendation Review workshop held on 26 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendations 3.1.1, 3.2.2, 3.2.3 and 3.2.5), ASX informed and provided evidence that they have built a new Project Delivery Assurance Framework (PDAf) which has been formalised and is currently going through its first iteration with the project delivery teams (including Project Owners and Sponsors) from June 2022 to mid-late September 2022.

The PDAf document states that the framework documents the fundamentals of Project Delivery Assurance (Purpose, Principles, Methodology, Testing Criteria, Process for Review, Outcomes and Results, and Review Closure) to ensure a comprehensive and structured approach to the assurance of ASX projects.

Under the 'Purpose' section of the PDAf, ASX states that the PDAf was established as part of the ASX Delivery Governance framework to improve project planning, prioritisation, delivery and deployment.

The Quality Assurance process applies throughout the life of programs and projects to:

- Review and evaluate project health execution
- Assess and monitor how risks involved in planning, delivering and managing projects are being managed

The PDAf seeks evidence of effective controls across the project lifecycle, assessing against the following assessment criteria (where applicable):

- Change Management
- Financial Management
- Project Management
- Risk Management
- Stakeholder Management
- Technology Delivery and Management
- Procurement/Vendor Management

The Assurance Reviews will be fit-for-purpose and aligned to project assurance levels (as determined by the Project Risk Assessment (PRA) and/or current project risk profile). A range of review types considered are:

- **Set-up for Success Review**: An initial stage review that assesses if the scope and purpose of the project has been adequately considered and examines whether stakeholders' expectations of the project are realistic in relation to the planned outcomes, resource requirements, timetable and achievability

- **Inflight Assurance Review**: Inflight reviews examine projects/programs at key decision points during initiation, design, implementation, delivery and handover. The review may focus on specific aspects or issues identified as required. These reviews will align with the 4 stages of the ASX Delivery Framework and will serve to convey recommendations and

advice to project stakeholders. This review is also designed to provide a prognosis for project success

- **Thematic**: Targeted focus area review across multiple projects designed to identify trends and the effectiveness of specific project activity

The framework states that the level of assurance or scrutiny that will be applied increases as the project and or program risk or exposure is increased:

- **Level 1 (high scrutiny):** ▬▬

- **Level 2 (medium scrutiny):** ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

- **Level 3 (low scrutiny):** ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

Should the project and or program risk profile change throughout the lifecycle, the assurance level and scrutiny will be updated and applied accordingly.

Under the 'Metrics' section of the PDAf, ASX defines the ratings that will be applied and notes that there will be a single overall rating for the project and/or program at a point in time. The rating will be based on the project/program's current performance and will provide an assessment on the likelihood of project/program success.
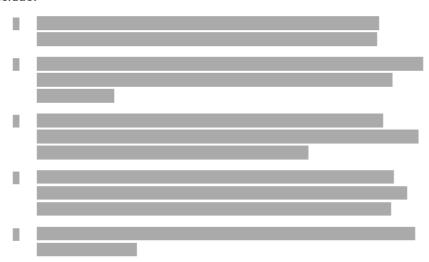
Grades of confidence will range from Green (high level confidence) through to Red (successful project delivery appear unachievable), as per the following definitions:

- **Green**: Consistent application of project delivery controls & frameworks evidenced. Delivery process improvements are ongoing & generally provide good practice. No 'High Rated' outstanding issues or risks identified. High level confidence that project is setup for success

- **Amber:** Problems regarding adequacy of processes, their application and project performance exist but corrective actions are in place with reasonable confidence that project is setup for success

- **Red:** Successful project delivery appears unachievable. Major issues and/or risks identified and do not appear to be manageable or resolvable

In addition to the overall rating for the project and/or program at a point in time, grades of confidence will also be applied to each project/program criteria. The overall assurance RAG rating will be the average rating of all criteria assessed.

The key focus areas that projects/programs will be assessed against may include:

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Each focus area will be issued with one of three ratings:

- **Strong:** Requirements are being met and/or exceeded and there are no major issues identified in the review

- **Satisfactory:** Requirements are generally being met; however, there are items/activities that require attention

- **Needs Attention:** Requirements are generally not being met and there are significant items/activities that require immediate attention

Prior to the introduction of the new PDAf, ASX has been utilising existing project performance measures and metrics which have been available on their Confluence site under the page 'Project / Small Change Health Monitoring & Reporting' and panel title 'RAG Status Definition' since May 2020. The 'RAG Status Definitions' describe the acceptable tolerance levels within project delivery to highlight where escalation and intervention is required, and the RAG Status Indicator provides visual indication of the current health of a project.

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Launch of Project Delivery Assurance Framework by Project Assurance Specialist	20/06/2022
Outlook Email	Project Delivery Assurance Framework Launch email from Chief Customer and Operating Officer (CCOO) to delivery teams	22/06/2022
Risk Culture Training Sessions	A series of face-to-face Risk Culture Training sessions held throughout June 2022 for project delivery community	June 2022

Recommendation 3.2.2: Investigate whether to formalise quality management into delivery process

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date.		

Comment (continued):

While ASX has built a Project Delivery Assurance Framework (PDAf) that defines project performance metrics and measures at the beginning of project initiation, this has been rolled out recently and is their first iteration of the assurance process, due to finish by mid-late September 2022.

Additionally, while the PDAf is appropriate for project and risk activities, the referenced 'Independent Testing Quality Assurance Framework' under the 'Technology Delivery and Management' Assessment Criteria is currently under development as part of future Recommendations (6.1.2 and 6.5.2) due in later quarters. ASX should update their PDAf to include their existing process on how to review any testing assurance that may arise in the interim, noting that the Independent Testing Quality Assurance Framework is not yet launched.

As a result, we are marking the appropriateness and sustainability of ASX Action 2 as 'Partially Addressed' until such time we can confirm that

ASX has completed the first iteration of the project assurance activities and reported on the results to the relevant forums, as well as updated their PDAf to include their existing process for testing quality assurance in the interim.

EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.

Background/Tasks

Investigate and determine the benefits of formalising upon quality management framework (e.g. ISO 9001 or similar), for embedding into project process and policies.

ASX Action(s)

1. Project Assurance Specialist (New Headcount) to be recruited
2. Define and Build (ready for rollout) a Project Assurance Framework

Findings

ASX Action 1:

As stated in the Findings for Recommendation 3.1.1, ASX Action 1, ASX has recruited a new Senior Project Assurance Specialist who started on 26 April 2022. Prior to this permanent appointment, the role was filled internally for an interim from 8 November 2021 until the new recruit started.

ASX Action 2:

As stated in the Findings for Recommendation 3.1.1, ASX Action 2, ASX has built a new Project Delivery Assurance Framework (PDAf) which has been rolled out to the project delivery teams (including Project Owners and Sponsors) in June 2022 and is currently undergoing its first iteration, due to finish by mid-late September 2022. It has been

designed to formalise an integrated review plan with Enterprise Risk and Internal Audit.

The PDAf document states that the framework "*draws from best practice and industry standards including Association for Project Management (APM) Body of Knowledge (6th edition), ISO 10006:2018, Gartner Research and the Project Management Institute, Project Management Body of Knowledge (PMO PMBOK 7th edition).*"

It also states that the framework documents the fundamentals of Project Delivery Assurance (Purpose, Principles, Methodology, Testing Criteria, Process for Review, Outcomes and Results, and Review Closure) to ensure a comprehensive and structured approach to the assurance of ASX projects.

The benefits of the framework stated include:

- Enabling ASX Enterprise Delivery to continuously inform EXCO about the status and performance of projects and/or programs
- Strengthening ASX governance of projects and or programs is enabled with consistent, independent and expert advice
- Informing EXCO to enable project and or program related decisions
- Identifying risks early so they can be appropriately managed and treated
- Supporting collaboration and continuous improvement across all delivery

The PDAf was established as part of the ASX Delivery Governance framework to improve project planning, prioritisation, delivery and deployment.

During the Recommendation Review Workshop held on 26 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendations 3.1.1, 3.2.2, 3.2.3 and 3.2.5), ASX stated that the delivery of a formal Testing Quality Assurance Framework is scheduled to be submitted in March 2023 as part of Recommendation 6.1.2. ASX further explained that in the interim, the project assurance team will liaise with the testing team for assurance when required, including how the testing quality is being managed, tracked and planned.

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Launch of Project Delivery Assurance Framework by Project Assurance Specialist	20/06/2022
Outlook Email	Project Delivery Assurance Framework Launch email from Chief Customer and Operating Officer (CCOO) to delivery teams	22/06/2022
Risk Culture Training Sessions	A series of face-to-face Risk Culture Training sessions held throughout June 2022 for project delivery community	June 2022

Recommendation 3.2.3: Update policy so that EPMO on PSG for P1 projects

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date.		

This recommendation has been largely closed with the actions conducted to date.

While ASX has built a Project Delivery Assurance Framework (PDAf) that defines project performance metrics and measures at the beginning of project initiation, this has been rolled out recently and is their first iteration of the assurance process, due to finish by mid-late September 2022.

Additionally, while the PDAf contains the 9-step process of what is involved in a project assurance review, and notes in Step 9 (and the Roles and Responsibilities table) that the Project/Program Sponsor is accountable for ensuring that the assurance review recommendations/actions are completed by the agreed timeframe, it is unclear the extent of reviews and approvals needed to consider a recommendation/action closed. It also does not specify what the escalation process is for any recommendations/actions that have not been closed by its due date.

Furthermore, the PDAf does not specify how agreed recommendations/actions will be assigned a priority/risk rating.

As a result, we are marking the appropriateness and sustainability of ASX Action 2 as 'Partially Addressed' until such time we can confirm that ASX has included in their PDAf the details around reviews and approvals needed to consider a recommendation/action closed; the escalation process for any recommendations/actions that have not been closed by the due date; and the relevant ASX Risk Rating matrices that will be applied to the agreed recommendations/actions.

EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.

Background/Tasks

Update the policies such that for Priority 1 projects the EPMO team is part of the governance functions to ensure compliance to ASX's processes, this is to ensure quality before a Line 3 audit is involved.

ASX Action(s)

1. Project Assurance Specialist to be recruited within the EPMO to ensure quality and compliance
2. Metrics and measures will be introduced as part of the Project Assurance Framework (refer 3.2.2) to monitor compliance.

Findings

ASX Action 1:

As stated in the Findings for Recommendation 3.1.1, ASX Action 1, ASX has recruited a new Senior Project Assurance Specialist who started on 26 April 2022. Prior to this permanent appointment, the role was filled internally for an interim from 8 November 2021 until the new recruit started. The Project Assurance Specialist sits under 'Enterprise Delivery', which includes EPMO.

During the recruitment process, ASX included as part of the 'Position Description' that role includes *"[working] closely with peers within the Enterprise Delivery Centre of Excellence and stakeholders (at all levels) across the Lines of Business and Internal Audit (Line 3) to define, establish and manage a Project Assurance Framework across the enterprise-wide delivery portfolio"*.

ASX Action 2:

As stated in the Findings for Recommendation 3.1.1, ASX Action 2, ASX has built a new Project Delivery Assurance Framework (PDAf) which has been rolled out to the project delivery teams (including Project Owners and Sponsors) in June 2022 and is currently undergoing its first iteration, due to finish by mid-late September 2022. It has been designed to formalise an integrated review plan with Enterprise Risk and Internal Audit.

Metrics and measures have been incorporated into the PDAf. For details on metrics and measures to monitor compliance, please refer to the 'Findings' section for *'Recommendation 3.1.1, ASX Action 2'* and *'Recommendation 3.2.2, ASX Action 2'*.

Under the 'Methodology' section of the PDAf, ASX has noted that assurance resources will be applied where risks are highest ████████ ████████████████████████ .

Project Assurance is an independent and objective assessment and ASX has stated that independence will extend to the ASX three lines of defence, taking an integrated view of internal and external assurance activities. The PDAf states that *"in practice, ASX project and or program teams will carry out quality control activities to ensure that requirements and or quality standards are met (Line 1). Line 2 defence may include assurance reviews undertaken by the ASX EPMO or an independent Assurance Reviewer. ASX Internal Audit and or an external audit party may be engaged to carry out Line 3 assurance activities (as required)."*

The assurance activities align and integrate with the ASX Project Management, Delivery Governance and Delivery Risk Frameworks, to ensure that there is no duplication of delivery and or delivery governance assurance and or compliance effort.

In the PDAf, ASX has outlined the 9-step process for their Project Assurance reviews:

1. **Planning (of the assurance review)**

2. **Briefing**
   - Assurance Reviewer will meet with project stakeholders ahead of the assurance review and brief the project participants and stakeholders on what to expect, the approach and timings, accountabilities etc.

3. **Submission of project documents and artefacts**
   - Recent and relevant documentary evidence will be sought by the Assurance Reviewer
   - A list of recommended documentary evidence will be provided to the project team and stakeholders by the Assurance Reviewer

4. **Interviews**
   - Interviews with project stakeholders will be for the purpose of information exchange and exploration, and or in the case where project documentation/artefacts have not been submitted, establish the extent to which the requirements for the criterion are met

5. **Assessment of the information gathered**
   - When carrying out a review, the reviewer should seek objective evidence to support the assessment criteria and then rate each criterion according to the ASX Project Delivery Assurance Metrics

6. **Report document**

   Depending upon the type of assurance review (Inflight or Set-up for Success) the Assurance Review Report may include:
   - The purpose, scope and approach of the review, including review dates, stakeholders interviewed and artefacts reviewed

- The assessment of overall delivery confidence and or potential issues and risks to successful implementation
- Key findings and recommendations, indicating when it is advisable to take action
- An overall conclusion of the project's status and readiness to progress to the next phase
- The progress achieved against previous review recommendations (if applicable)

7. **Sharing of assurance review findings and recommendations**

- The draft Project Assurance Review report (the 'report') will be submitted to key project stakeholders for review
- and a meeting/s will be scheduled to walk stakeholders through the assurance findings and recommendations.
- Refinements and any amendments will be made to the report by the Assurance Reviewer before the finalised
- report is submitted to the Project Sponsor

8. **Submission of report**

- The finalised report will be submitted to the Project Sponsor. All agreed actions and next steps will be followed up by the Assurance Reviewer in accordance with the recommendations, timing and actions captured in the report

9. **Recommendation Actions**

- The Project Sponsor is accountable for ensuring that assurance review recommendations and actions are addressed by the project team and completed within the agreed timeframes

ASX Action(s) update Communication Log:

Channel	Description	Date
Blog Post on Confluence	Launch of Project Delivery Assurance Framework by Project Assurance Specialist	20/06/2022
Outlook Email	Project Delivery Assurance Framework Launch email from Chief Customer and Operating Officer (CCOO) to delivery teams	22/06/2022
Risk Culture Training Sessions	A series of face-to-face Risk Culture Training sessions held throughout June 2022 for project delivery community	June 2022

Recommendation 3.2.5: Delivery gaps challenged by PSG, project team and EPMO

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been partially closed with the actions conducted to date. For ASX Action 1, while ASX has built a Project Delivery Assurance Framework (PDAf) that defines project performance metrics and measures at the beginning of project initiation, this has been rolled out recently and is their first iteration of the assurance process, due to finish by mid-late September 2022. Additionally, while the PDAf is appropriate for project and risk activities, the referenced 'Independent Testing Quality Assurance Framework' under the 'Technology Delivery and Management' Assessment Criteria is currently under development as part of future Recommendations (6.1.2 and 6.5.2) due in later quarters. ASX should update their PDAf to include their existing process on how to review any testing assurance that may arise in the interim, noting that the Independent Testing Quality Assurance Framework is not yet launched. As a result, we are marking the appropriateness and sustainability of ASX Action 1 as 'Partially Addressed' until such time we can confirm that ASX has completed the first iteration of the project assurance activities and reported on the		

results to the relevant forums, as well as updated their PDAf to include their existing process for testing quality assurance in the interim.

For ASX Action 2, while ASX has stated that the Project Risk Specialist, Project Assurance Specialist (PAS) and ERM Line 2 resource will be tasked with challenging delivery gaps prior to Line 3 internal or external audit, the assurance process is currently undergoing its first iteration.

As a result, and similarly for ASX Action 1, we are marking the sustainability of ASX Action 2 as 'Partially Addressed' until such time we can confirm that ASX has completed the first iteration of the project assurance activities and reported on the results to the relevant forums.

EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.

Background/Tasks

Delivery gaps should be challenged and highlighted by the governance, delivery, and EPMO functions during delivery addressed prior to Line 3 internal or external audit involvement.

ASX Action(s)

1. Project Assurance Framework and metrics / measures will identify any compliance gaps (Refer 3.2.2)
2. Project Risk Specialist, Project Assurance Specialist and ERM Line 2 resource will be tasked with challenge

Findings

ASX Action 1:

As stated in the Findings for Recommendation 3.1.1, ASX Action 2, ASX has built a new Project Delivery Assurance Framework (PDAf) which has been rolled out to the project delivery teams (including Project Owners and Sponsors) in June 2022 and is currently undergoing its first iteration, due to finish by mid-late September 2022. It has been designed to formalise an integrated review plan with Enterprise Risk and Internal Audit.

Metrics and measures have been incorporated into the PDAf. For details on metrics and measures to monitor compliance, please refer to 'Findings' section for *'Recommendation 3.1.1, ASX Action 2'* and *'Recommendation 3.2.2, ASX Action 2'*.

ASX Action 2:

As stated in the Findings for Recommendation 3.1.1, 3.2.2 and 3.2.3, Project Assurance is an independent and objective assessment *'to confirm that the program or project is on track to deliver the required benefits within agreed scope, time, quality and costs and is aligned with the organisation's strategic objectives'*, including identifying delivery gaps and offering recommendations to improve management and delivery.

Under the 'Project Delivery Assurance Roles and Responsibilities' section in the PDAf, it details key project assurance responsibilities, including the following roles:

- **Project Risk Specialist:** Responsible for risk advice and monitoring of the projects. The Project Risk Specialist supports the project to address any risk related recommendations. In addition, ensures that the Project Risk Framework continues to align with this framework

- **Assurance Specialist and Reviewer:** Responsible for the definition, development, embedding and execution of the ASX Project Delivery Assurance Framework. The Assurance Specialist/Reviewer is also the contact point for any project delivery assurance related information

The role and responsibility of ERM Line 2 resources is detailed in the 'Guidance for Line 2 on Project Risk Governance' document, where it states under '1. Project Risk Assessment', title 'Risk/issue identification, assessment and management' that the Line 2 resource will *'Review and challenge the completeness & adequacy of the project risk assessment (inc. likelihood and impact assessment and rationale). Is the project being too optimistic in the assessments made in the PRA? Line 2 should be the 'black hat').'* Under '2. Process Risk Assessment', title *'Risk/issue identification, assessment and management'*, it states that the Line 2 resource will *'Review and challenge the completeness & adequacy of the process risk assessment'.'*

ASX Action(s) update Communication Log:

Channel	Description	Date
Outlook Email	Email from CRO to Enterprise Risk and Enterprise Compliance teams on 'Expectations of Line 2 on projects'	27/10/2021
Blog Post on Confluence	Launch of Project Delivery Assurance Framework by Project Assurance Specialist	20/06/2022
Outlook Email	Project Delivery Assurance Framework Launch email from CCOO to delivery teams	22/06/2022
Risk Culture Training Sessions	A series of face-to-face Risk Culture Training sessions held throughout June 2022 for project delivery community	June 2022

Recommendation 6.3.2: Define risk-based testing approach

	Executed	Appropriate	Sustainable
ASX Action 1	✔	✔	✔
ASX Action 2	✔	✔	✔
ASX Action 3	✔	✔	✔
ASX Action 4	✔	✔	✔
ASX Action 5	✔	✔	✔
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date. For ASX Action 5, while ASX has defined and documented the RBT approach and techniques into their testing policy and has recently implemented this in practice, ASX has not provided evidence that they have established the QE authority and reported the metrics to the forum. As a result, we are marking the execution, appropriateness, and sustainability of ASX Action 5 as 'Partially Addressed' until such time we can confirm that ASX has defined the terms of reference for the QE authority, established the forum, and reported metrics to the forum. EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.		

Background/Tasks

Define and document the risk-based testing approach and techniques in the testing policy.

ASX Action(s)

1. Recruit second Test Lead (Methods, Processes, Procedures)
2. Design and implement an enhanced quality risk assessment and management methodology, aligned to risk-based pathways
3. Create a standardised quality risk and risk mitigation library aligned with ASX test methodology and techniques
4. Implement risk based testing methodology with appropriate education and communication
5. Integrate risk based testing methodology with metrics and reporting provided to QE authority

Findings

ASX Action 1:

ASX has recruited a second Test Lead (Quality Engineering Lead (Methods, Processes, Procedures)) who started on 18 July 2022.

During the Recommendation Review workshop held on 25 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendation 6.3.2), ASX informed that the new recruit is a contractor ▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮. ASX stated that their goal is to have permanent hire (the role is incorporated as part of ASX's permanent headcount) ▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮.

Prior to the recruitment of the permanent Test Lead, an interim appointment was made with an external vendor resource, effective from 1 July 2022. ASX has noted that a handover will run between 18 July 2022 to 29 July 2022.

ASX has included as part of the 'Position Description' that the Quality Engineering Lead will "*provide focused expertise in the implementation, optimisation and transformation of testing and quality engineering methodologies, techniques, practices, processes and procedures to*

ensure testing, quality and risk mitigation efforts are successful, productive, and efficient."

ASX Action 2:

ASX has created the 'QE Strategy – Risk Based Testing' page on Confluence under the 'Quality Engineering and Testing (QE&T) homepage on Confluence. This page documents the purpose, outcomes and benefits of the Quality Engineering & Testing Risk Based Strategy (RBT) which they have implemented.

The section titled 'Recommended Assessment Method (RBT Workshop)' under the 'QE Strategy – Risk Based Testing' page details the recommended method for performing an RBT assessment, which is through a collaborative workshop, hosted by the Test Manager and involving various SMEs relevant to the change. The purpose of the workshop is to complete the RBT assessment collaboratively and leveraging the experience and knowledge of SMEs and, thereby, determine a proposed testing scope and identify any residual risks.

Under the 'Assessment FAQ' section, it is stated that the RBT assessment results must be recorded in the 'RBT assessment template' to ensure outcomes are presented in a consistent manner, and a link to worked examples based on real historical changes are provided in the RBT examples page. The examples are intended to illustrate the comparison between the testing scope that was chosen prior to RBT and the recommended testing scope that would have been applied from RBT test treatments (i.e., retrospectively).

ASX Action 3:

The section titled 'Change Characteristics Reference' under the 'QE Strategy – Risk Based Testing' page describes the change characteristics to identify a change profile for Risk Based Testing. The section immediately after, titled 'Test Treatment Library', then describes test treatments (including both functional testing and non-functional testing) that should be applied to the change profile to mitigate risk related to production leakage resulting from change.

During the Recommendation Review workshop held on 25 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendation 6.3.2), ASX

explained that in the RBT assessment workshop, the test manager will utilise the experience and knowledge of all the participating SMEs to identify the change characteristics and select the test treatment for each test type that most appropriately mitigates the risks to a low level.

ASX stated that there is deliberately no hard and fast algorithmic mapping as every single context is different and they did not want to dilute the test manager's accountability by giving the test managers a fixed pattern to follow.

ASX has provided evidence that they have performed the RBT assessment on projects █████████████████████████ ████████████████

ASX Action 4:

As part of the implementation of the Risk Based Testing methodology, ASX has conducted virtual 'Risk Based Testing Strategy – Fundamentals' training sessions with their QE&T community, to provide context, information and guidance about the QE&T Risk Based Training Strategy.

Additionally, ASX held a series of virtual 'Brown Bag Sessions' which were information sessions providing an introduction to Risk Based Testing.

During the Recommendation Review workshop held on 22 July 2022 (Q3 ASX Remedial Actions - Q&A Review for Recommendation 6.5.1), ASX informed that the Fundamentals Training, which covered RBT Strategy and Defect Management Strategy, and the Brown Bag sessions were not mandatory, however test managers worked to ensure their team members were covered. The training sessions were recorded and put online in the QE&T home page for everyone to access, especially participants who could not attend. The training material and videos have been incorporated into the onboarding process. ASX stated that refresher sessions for test team members will be covered under the training program as part of Recommendation 6.3.1, due to be submitted in a future quarterly review.

In their written response from 4 August 2022, ASX confirmed that all the Test Managers had attended the training and the training would be mandatory for all new test managers in the future as part of the

onboarding process to be incorporated as part of Recommendations 6.3.1.

ASX Action 5:

The section titled 'Metrics and Reporting' under the 'QE Strategy – Risk Based Testing' page describes the metrics and reporting related to RBT that should be established and integrated into existing or new testing and quality reporting to provide relevant RBT information for decision-making, governance, improvement and overall assessment of RBT adoption (i.e., submitting the RBT assessment template).

ASX states that the agreed test scope and coverage from an RBT assessment is handled in the same way that existing testing scope and coverage is integrated into test, project, risk, PMO and release processes, documentation, and reporting. This includes (depending on the change type and related frameworks):

- Test planning, test status, and test completion reporting
- Project reporting
- Existing governance reporting and forums
- Out-of-appetite project reporting and aggregated risk reporting into the Board
- QE&T measurement and reporting
- Risk management reporting
- Change delivery reporting (for example, test management, defect management, and project reporting)

The QE authority is responsible for collecting the data as part of a discussion between the Test Manager and QE authority (and recorded by the QE authority) to identify opportunities for improvements in the RBT assessment process, change characteristics, and test treatment library.

ASX Action(s) update Communication Log:

Channel	Description	Date
MS Teams Meeting	'Risk Based Testing Strategy – Fundamentals v1.0' training session	23/06/2022 and 24/06/2022
MS Teams Meeting	Brown Bag Sessions – Delivery Excellence IBMR Information Session	27/06/2022-1/07/2022

Recommendation 6.5.1: Implement defect analysis techniques including linkage to releases, tests, & functions

	Executed	Appropriate	Sustainable
ASX Action 1	✓	✓	✓
ASX Action 2	✓	✓	✓
ASX Action 3	✓	✓	✓
ASX Action 4	✓	✓	✓
ASX Action 5	✓	✓	✓
Recommendation Addressed?	Partially		
Comment	This recommendation has been largely closed with the actions conducted to date.		

This recommendation has been largely closed with the actions conducted to date.

For ASX Action 1, while ASX has documented the approach for enhanced defect analysis techniques, ASX has only recently implemented this in practice.

As a result, we are marking the sustainability of ASX Action 1 as 'Partially Addressed' until such time we can confirm that ASX has been able to capture significant insight from performing these enhanced defect analysis techniques in practice.

For ASX Action 2, while ASX has provided evidence of how they link their defect, incident and problem management processes, they have not showed how this linkage has been used to accurately measure defect leakage i.e., determined/tracked % of defects leaked into UAT/production.

As a result, we are marking the sustainability of ASX Action 2 as 'Partially Addressed' until such time we can confirm that ASX has been able to accurately measure defect leakage.

For ASX Action 3, while ASX has mandated root cause analysis (RCA) to be performed on higher severity defects and is currently performing RCA, ASX is still in early stages of capturing consistent and centralised data from performing RCA, and the data gathered to date is not sufficient to derive significant insight or commentary.

As a result, we are marking the sustainability of ASX Action 3 as 'Partially Addressed' until such time we can confirm that ASX has been able to gather sufficient data to analyse and derive commentary from performing RCA, as well as put in measures to act on the insights gathered.

For ASX Action 5, while ASX has stated they will integrate all metrics into QE authority and project reporting, ASX has not provided evidence that they have established the QE authority and reported to the forum. ASX has provided evidence of metrics incorporated into project reporting for a specific project, however they have not provided a portfolio view.

As a result, we are marking the execution, appropriateness, and sustainability of ASX Action 5 as 'Partially Addressed' until such time we can confirm that ASX has defined the terms of reference for the QE authority, established the forum, and reported metrics to the forum, as well as included a portfolio view of the metrics into project reporting.

EY will include the completion of this 'Partially Addressed' item in its scope for subsequent reviews.

Background/Tasks

Institute on-going defect analysis techniques (including defect prediction and defect modelling). Work with production tracking systems to accurately track Defect Leakage into production. Define and implement a method of linking defects to specific releases, tests and business functions. Begin tracking Defect Removal Efficiency into UAT and Production and Mandate Root Cause recording in defect analysis.

ASX Action(s)

1. Enhance ongoing defect analysis techniques, including defect leakage, defect modelling and prediction aligned to industry and internal standards and thresholds
2. Link defect, incident and problem management processes to accurately measure defect leakage
3. Mandate root cause analysis recording for higher severity defects and derive metrics and commentary
4. Integrate enhanced defect management processes into QE processes and procedures
5. Integrate all metrics into QE authority and project reporting

Findings

ASX Action 1:

ASX has created a 'QE Strategy – Defect Management' section under the 'QE&T Strategy' page on Confluence, navigated from the 'Quality Engineering and Testing (QE&T) Home' page. This section describes the enhanced Defect Management Strategy, including Defect Analysis techniques, SDLC integration processes, metrics and reporting and alignment with standards.

The section titled '4.2 Implementing Defect Analysis' asks users to adopt a 'Defect Analysis Strategy' to develop and implement a comprehensive defect analysis framework and set of defect metrics that will be valuable data and insights related to defects that can be used to:

- implement defect modelling and prediction

- identify high-risk applications/components/changes where enhanced risk mitigation should be undertaken
- understand and assess product quality at a point-in-time or as a trend
- identify corrective actions or continuous improvement related to testing and defect removal efficiency through mechanisms and forums such as the Post Implementation Review process and the QE&T continue improvement framework

The 'Defect Analysis Strategy' explains the outcomes and benefits of defect analysis, where it can and should be used, and provides a method that can be used for implementation of defect analysis in different scenarios. At ASX, Jira is the defect management tool used. It also includes a detailed method to develop a measurement plan.

Under the 'Model' section of the 'Defect Analysis Strategy', ASX has listed the industry and internal standards that were considered and aligned to, including:

- ISO-IEC-IEEE-29119-1 - Defect Management
- ISO-IEC-IEEE-29119-2 – Test Management Process
- TMMI 2.6 Level 5 Optimization
- ASX: Enterprise Quality Forum - Terms of Reference
- ASX Framework: ASX Delivery Governance
- QE&T Strategy: QE Strategy - Defect Management
- QE&T Strategy: Roles and Responsibilities
- QE&T Strategy: Root Cause Analysis

Under the 'Method' section of the 'Defect Analysis Strategy', ASX has provided an example of an effective measurement plan which includes an end-to-end design:

1. **Objective**: Defining what they want to achieve and measure i.e., the objectives, outcomes, and associated measures of defect properties. This is a key step to ensuring metrics are not being generated just for the sake of metrics

2. **Metrics & Data**: Designing how they will measure the objectives, including the metrics that will support the measures and the operational definition of the metrics

3. **Interpretation & Insights:** Planning for interpretation and presentation (charting) of the metrics and measures to derive insights related to the objectives and outcomes and, where appropriate, generate recommendations against the insights

4. **Reporting & Communication:** Defining the publication of measures, insights, conclusions, and recommendations to stakeholders

5. **Advice & Process Integration:** Establishing pre-defined metric responses or advice (e.g., actions, activities) and process integration where the metrics will be used

ASX has created a page under the 'QE Strategy – Defect Management' section titled 'Defect Analysis Examples', and provides defect analysis examples covering:

- Defect Density
- Defect Prediction
- Defect Introduction and Removal

ASX Action 2:

Under the 'Defect Analysis Strategy' page on Confluence, ASX has created a section titled 'Linking Defect, Incident and Problem Management', which provides context about *'the relationship between existing ASX processes for incident management and problem management, how these are linked to defect management, and how these related to the analysis of production defect leakage as a feedback loop to identify gaps in testing coverage and improvements to the testing, quality, defect detection, and defect removal processes.'*

Additionally, it provides information about the process to accept defects into production as 'known errors'. ▮▮▮▮▮▮▮▮▮▮▮▮

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Below are the standards that were referenced by ASX to articulate the relationships:

- ISO-IEC-IEEE-29119-1 - Defect Management

- ISO-IEC-IEEE-29119-2 - Test Management Process
- ASX Testing Policy and Guidelines - Existing Bug flows and best practices
- ASX Problem Management Process - Problem Management Process Documentation
- ASX Problem Management Policy - Problem Management Process Documentation
- ASX Incident Management Process - Incident Management Process Documentation
- ASX Incident Management Policy - Incident Management Process Documentation
- ASX Delivery Framework - Post Implementation Review (PIR) and Service Release Retro's
- ASX Incident Management Framework - Incident Management Framework

ASX provides the following descriptions for Defect Management, Incident Management and Problem Management:

- **Defect Management:** The defect management process is a set of activities essentially designed to continuously detect, assess and remove defects during the software development lifecycle (SDLC)

- **Incident Management:** The goal of ASX ITSM incident management is to restore an affected service to normal operation within agreed service level targets and to minimise the impact of this service degradation during the incident

- **Problem Management:** The goal of ASX ITSM problem management is to prevent a service from degradation and to remain within agreed service level targets

As part of ASX's 'Problem Management Process':

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introduce improvements) can employ to help identify root causes of defects within their change/project delivery lifecycle. The Root Cause Analysis techniques described are:

- Ishikawa Cause and Effect (Fishbone) Diagram
- 5 Whys Analysis Technique

Under the 'Model' section of the 'Root Cause Analysis', ASX has listed the industry and internal standards that were considered and aligned to, including:

- ISO-IEC-IEEE-29119-1, Section 5.8 - Defect Management
- ISO-IEC-IEEE-29119-2, Section 8.5 - Test Incident Reporting Process (where the incident (defect) details will be captured/reported)
- TMMi Level 5 - Optimising - PA 5.1: Defect Prevention
- ISTQB Certified Tester Expert Level Implementing Test Process Improvement - Analytical Based Improvement and Causal Analysis
- ISTQB Certified Tester Foundation Level - Defects, Root Causes and Effects
- ASX Testing Policy and Guidelines - Existing Bug flows and best practices
- ASQ Blog - What is root cause analysis

Furthermore, under the 'QE Strategy – Defect Management' page, section titled '4.6. Initial Implementation - Project and EQF Defect Metrics', ASX has introduced a new dropdown 'Defect Root Cause' field that has been added to 'Jira' for the 'bug' issue type, to enable the mandatory capture of the root cause of the defect once this has been identified during the defect lifecycle for the highest severity defects (i.e., severity 1, 2 and 3). While it is not mandated for lower severity defects, it is highly recommended at ASX that the defect root cause category be captured for all defects to provide representative data for measures, insights, and reporting.

ASX Action 4:

ASX has included as part of the 'QE Strategy – Defect Management' page, under section titled '4.4. Reporting and Communication' details of

ASX Action 3:

ASX has mandated for all new projects commencing from 1 July 2022, that Root Cause Analysis process, techniques, insights, recommendations, and response mechanisms need to be applied, at a minimum, to defects with critical and high severities (i.e., severity 1, 2 and 3) in order to deliver statistically relevant and valuable insights into defects management and reporting.

It is the accountability of the Test Manager (or the person taking a test management role in smaller changes) to ensure that this data is being collected during the defect management lifecycle.

ASX has included as part of its 'QE Strategy – Defect Management' page a section titled 'Root Cause Analysis' which introduces the processes and techniques that a Test Manager (or any team member who seeks to

how to report and communicate defect-related metrics, insights and recommendations as part of a measurement plan.

As stated in the Findings for ASX Action 3, it is the accountability of the Test Manager (or the person taking a test management role in smaller changes) to ensure that this data is being collected during the defect management lifecycle.

The reports produced as a result of the metrics derived from defect management processes is consumed by various audiences as part of QE processes and procedures, including:

- teams and team members
- change teams (project/program)
- lines of business (LOB)
- application/platform owners
- governance and steering committees across the organisation from projects through to executives
- continuous improvement forums including the QE authority (Enterprise Quality Forum - EQF)
- auditors and regulators
- the Board
- customers

ASX Action 5:

Under the 'QE Strategy - Defect Management' page, ASX has included a section titled '4. Defect Governance, Reporting and Metrics', which highlights the importance of defect reporting (data gathering) during the defect management process to present and communicate defect-related metrics, insights and recommendations to governance forums, decision-makers, stakeholders, and other interested parties.

As stated in the Findings for ASX Action 3, it is the accountability of the Test Manager (or the person taking a test management role in smaller changes) to ensure that this data is being collected during the defect management lifecycle to feed into relevant reporting.

In their written response from 3 August 2022, ASX provided evidence of metrics being incorporated into the project reporting for their ▒▒▒▒▒ project.
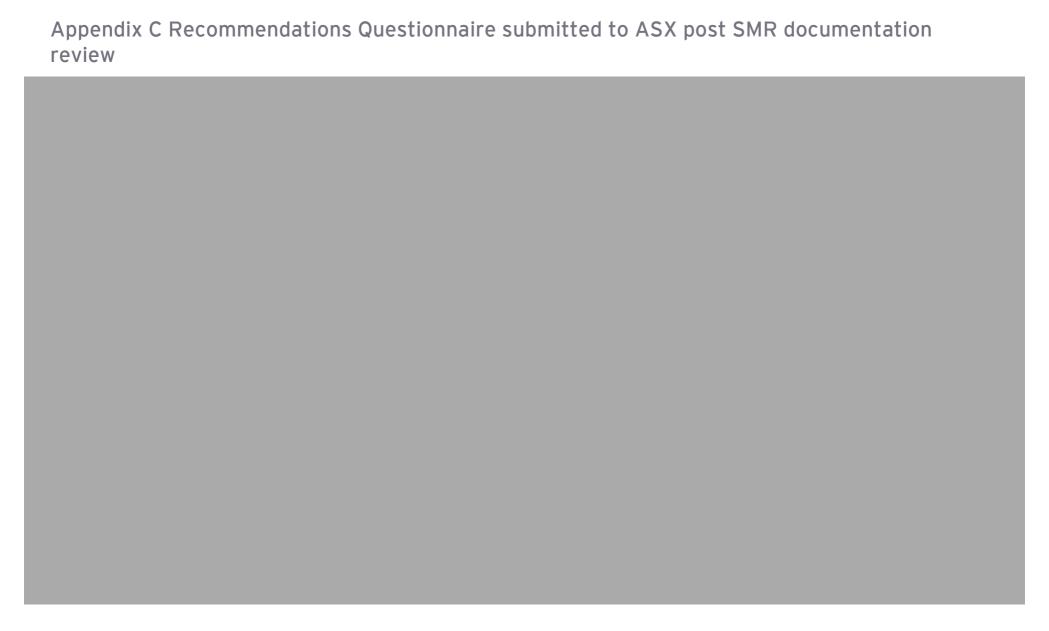
ASX Action(s) update Communication Log:

Channel	Description	Date
MS Teams Meeting	'Defect Management Strategy - Fundamentals v1.0' training session	23/06/2022 and 24/06/2022
MS Teams Meeting	Brown Bag Sessions – Delivery Excellence IBMR Information Session	27/06/2022- 1/07/2022

Appendix A Recommendation review workshops list

#	Date	Meeting Title
1	1/06/2022	Project Assurance Introduction Session
2	16/06/2022	ASX Risk Awareness Training Session
3	22/07/2022	Q3 ASX Remedial Actions - Q&A Review for Recommendation 6.5.1
4	25/07/2022	Q3 ASX Remedial Actions - Q&A Review for Recommendation 6.3.2
5	26/07/2022	Q3 ASX Remedial Actions - Q&A Review for Recommendation 1.1.1
6	26/06/2022	Q3 ASX Remedial Actions - Q&A Review for Recommendations 3.1.1, 3.2.2, 3.2.3 and 3.2.5
7	27/06/2022	Q3 ASX Remedial Actions - Q&A Review for Recommendations 1.2.2, 1.2.3, 1.2.5 and 1.4.1
8	10/08/2022	Q3 ASX IBM Recommendations: EY IE Draft Report Factual Accuracy Check Review

Appendix B Interviewed ASX stakeholders list

Role
Group Executive, Technology and Data and CIO
General Manager, Enterprise Delivery
General Manager, Enterprise Risk Management
General Manager, Customer and Technical Operations
Senior Manager, Enterprise PMO, Enterprise Delivery
Senior Project Risk Management Specialist, Enterprise Delivery
Senior Project Assurance Specialist, Enterprise Delivery
Head of Quality Engineering & Testing
Quality Engineering Lead (Metrics, Reporting & Assurance)
Project Manager, Enterprise Delivery
Project Manager, IBMR

Appendix C Recommendations Questionnaire submitted to ASX post SMR documentation review

Appendix D Documents reviewed

Appendix E Status summary of all 59 Recommendations

ASX has submitted forty-three (43) Recommendations for closure to date. Out of the forty-three (43) Recommendations, thirty-five (35) Recommendations have been deemed 'fully addressed' and closed, with eight (8) Recommendations deemed as 'partially addressed' and requiring further evaluation in upcoming quarterly review periods.

The Design Adequacy ("DA") Report submitted on 27 April 2022 identified that 13 Recommendations out of the remaining 37 Recommendations which had yet to be submitted at that point in time, were partially addressed and did not have ASX Actions fit for purpose to address the IBM Recommendations. In order for ASX to fully address the Recommendations during the relevant quarterly submission period, ASX should take into consideration the Independent Expert Recommendations for those partially addressed Recommendations in the DA Report.

Below is an overview of each of the 59 Recommendations and their closure / submission status at the end of the third quarterly review period (12 August 2022):

Status	Description	Total (59)
✔ Closed	Recommendation reviewed by the IE and deemed fully addressed	35
✔ Partially Addressed	Recommendation submitted by ASX, reviewed by the IE but currently deemed partially addressed	8
‖ Not Submitted	Recommendations not yet submitted by ASX (expected due date indicated)	16
✘ Original Submission Date	Indicates the original date Recommendation was submitted by ASX but deemed partially addressed by IE after review. *Applicable for Recommendations deemed fully addressed in subsequent quarterly review periods.*	

#	IBMR	Design Adequacy - Fit for Purpose?	Status	Q1	Q2	Q3 (Current)	Q4	Q5	Q6	Q7
1. Risk Related Recommendations										
1	1.1.1	Partial	Closed			✔				
2	1.2.1	N/A	Closed	✘		✔				
3	1.2.2	Yes	Closed			✔				
4	1.2.3	Yes	Closed			✔				
5	1.2.4	N/A	Closed	✔						
6	1.2.5	Partial	Closed			✔				
7	1.2.6	Yes	Closed		✘	✔				
8	1.3.1	N/A	Closed	✔						

#	IBMR	Design Adequacy - Fit for Purpose?	Status	Q1	Q2	Q3 (Current)	Q4	Q5	Q6	Q7
9	1.3.2	N/A	Closed	✔						
10	1.3.3	N/A	Closed	✔						
11	1.3.4	Yes	Not Submitted				‖			
12	1.3.5	N/A	Closed	✔						
13	1.3.6	Partial	Closed		✘	✔				
14	1.3.7	Partial	Closed			✔				
15	1.3.9	N/A	Closed	✔						
16	1.3.10	N/A	Closed	✔						
17	1.4.1	Yes	Submitted			✔				
			2. Governance Related Recommendations							
18	2.1.1	N/A	Closed	✔						
19	2.1.2	N/A	Closed	✔						
20	2.1.3	N/A	Closed	✔						
21	2.1.4	N/A	Closed	✔						
			3. Delivery Related Recommendations							
22	3.1.1	Yes	Submitted			✔				
23	3.1.2	N/A	Closed	✔						
24	3.1.3	N/A	Closed	✔						
25	3.1.4	N/A	Closed	✔						
26	3.2.1	Yes	Not submitted				‖			
27	3.2.2	Partial	Submitted			✔				
28	3.2.3	Yes	Submitted			✔				
29	3.2.4	N/A	Closed	✔						
30	3.2.5	Yes	Submitted			✔				
31	3.2.6	N/A	Closed	✔						
32	3.2.7	N/A	Closed	✔						
			4. Requirements Related Recommendations							

#	IBMR	Design Adequacy - Fit for Purpose?	Status	Q1	Q2	Q3 (Current)	Q4	Q5	Q6	Q7
33	4.1.1	N/A	Closed	✔						
			5. Vendor Management Related Recommendations							
34	5.1.1	N/A	Closed	✘		✔				
35	5.1.2	N/A	Closed	✘		✔				
36	5.1.3	Yes	Closed		✔					
			6. Testing Related Recommendations							
37	6.1.1	Yes	Not Submitted				‖			
38	6.1.2	Yes	Not Submitted						‖	
39	6.1.3	Yes	Not Submitted							‖
40	6.2.1	Yes	Not Submitted							‖
41	6.2.2	Yes	Closed		✔					
42	6.3.1	Partial	Not submitted					‖		
43	6.3.2	Yes	Submitted			✔				
44	6.3.3	Yes	Not Submitted						‖	
45	6.4.1	Partial	Closed		✔					
46	6.4.2	Yes	Not Submitted						‖	
47	6.4.3	Partial	Not Submitted				‖			
48	6.4.4	Yes	Closed		✔					
49	6.4.5	Partial	Not Submitted					‖		
50	6.4.6	Yes	Not Submitted							‖
51	6.4.7	Yes	Not Submitted					‖		
52	6.4.8	Yes	Submitted		✔					
53	6.5.1	Partial	Submitted			✔				
54	6.5.2	Yes	Not Submitted				‖			
55	6.5.3	Partial	Not Submitted						‖	
56	6.5.4	Yes	Not Submitted				‖			
57	6.6.1	N/A	Closed	✘		✔				

#	IBMR	Design Adequacy - Fit for Purpose?	Status	Q1	Q2	Q3 (Current)	Q4	Q5	Q6	Q7
58	6.7.1	Partial	Closed		✔					
7. Incident Management Related Recommendations										
59	7.1.1	Partial	Closed		✔					

Appendix F Release Notice

Ernst & Young ("EY") was engaged on the instructions of ASX Operations Pty Ltd ("ASX", "Client" or "you") to conduct an Independent Assessment of ASX's Actions to address the IBM Recommendations ("Project"), in accordance with the engagement agreement dated 22 December 2021 including the General Terms and Conditions ("the Engagement Agreement").

The results of EY's work, including the assumptions and qualifications made in preparing the report, are set out in EY's report dated 12 August 2022 ("Report"). ASX and ASX's regulators ASIC and the RBA, should read the Report in its entirety including any disclaimers and attachments. A reference to the Report includes any part of the Report. No further work has been undertaken by EY since the date of the Report to update it.

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2. EY disclaims all liability in relation to any other party who seeks to rely upon the Report or any of its contents.

3. EY has acted in accordance with the instructions of ASX, in conducting its work and preparing the Report, and, in doing so, has prepared the Report for the benefit of the ASX and ASX's regulators ASIC and the RBA, and has considered only the interests of ASX and ASX's regulators ASIC and the RBA. EY has not been engaged to act, and has not acted, as advisor to any other party. Accordingly, EY makes no representations as to the appropriateness, accuracy or completeness of the Report for any other party's purposes.

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