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Annex:

The table below sets out areas of improvement identified by Accenture and DBS itself, and the actions already taken or which are being undertaken.

Key thematic areas for improvement (as identified by Accenture)	Accenture's key recommendations	Actions already taken or being undertaken
1. Technology risk governance and oversight	<ul style="list-style-type: none">○ Improve technology risk governance by clarifying roles and responsibilities of both the first and second lines of defence and encouraging greater challenge.	<ul style="list-style-type: none">○ DBS has established a new sub-committee of the Board Risk Management Committee called the BRMC Technology Risk Committee (BTRC). The BTRC will provide dedicated oversight of technology risk. It will also oversee the implementation of the remedial measures that the bank will carry out to address the findings of the Accenture review.○ The bank also transferred the Technology Risk Management team to the Risk Management Group, reporting to the Chief Risk Officer, to enhance independent checks and balances.
2. Incident management	<ul style="list-style-type: none">○ Improve problem and incident management, including accuracy of reporting and appropriate post-mortem reviews to propagate lessons learnt to the rest of the organisation.	<ul style="list-style-type: none">○ Work has commenced to establish clearer ownership and management of incidents within the bank, as well as between the bank and its service providers and vendors.○ The bank will also uplift its proactive problem management through the active review of early warning indicators, identification of other possibly affected areas, and taking preventive actions. This is in addition to ensuring that lessons learnt from prior incidents are shared with the rest of the organisation.



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3. System resilience	<ul style="list-style-type: none">○ Evolve technology architecture to cater for greater resiliency and speedier recoverability. The current active-active architecture ensures high availability, but additional stand-by capabilities might be needed for specific single points of failure.○ Carry out holistic simulations to failover to backup system(s) within regulatory mandated downtime limit.	<ul style="list-style-type: none">○ DBS is reviewing the bank's systems architecture for opportunities to provide additional resiliency. This is particularly important for systems and applications which support services for which customers expect minimal downtime.○ The bank is also working to ensure high availability of critical services and disaster recovery. This includes identifying potential failure scenarios and possible remediation actions, such as a having a warm standby (a back-up server that runs in the background of the primary system), or increased redundancy.○ A special budget of SGD 80 million has been set aside for this.
4. Change management	<ul style="list-style-type: none">○ Enhance rigour in system change management, with better impact assessment and testing before promoting new changes/releases to production. In particular, third-party vendor management needs to be improved.	<ul style="list-style-type: none">○ DBS is working to improve impact assessment and testing before implementing and going live with new changes and releases.○ The bank is also establishing a better protocol for vendor management and use of third-party tools. Having a rigorous process to manage change and vendors is important as the bank uses microservices by multiple vendors.



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The actions below taken by DBS are in addition to Accenture's recommendations.		
5. Technology organisation leadership and management		<ul style="list-style-type: none">Given the increased complexity and scale of the technology and operations (T&O) function, from 1 November, DBS is splitting T&O into two separate units to allow for dedicated management oversight of each. Jimmy Ng (currently Chief Information Officer and Group Head of T&O) will assume the role of Group Head of Operations. A search for a new CIO has been launched. In the interim, Han Kwee Juan (who will remain Singapore Country Head) will assume the role of Acting CIO. To enable him to give the needed attention and focus to the technology function, Sim S. Lim, currently a Senior Advisor to the bank, will temporarily return to manage the day-to-day operations of the Singapore organisation.DBS has strengthened the bank's site reliability engineering (SRE) with new leadership. Ho Twee Teng, a 40-year DBS technology veteran, was appointed as the bank's new Head of Enterprise Architecture Site Reliability Engineering (EASRE) from 18 October. DBS has also created a new Quality Assurance function within EASRE to provide an additional independent layer of verification, controls and checks, over the bank's change management process.
6. Technology operations		<ul style="list-style-type: none">With immediate effect, the bank has instituted a six-month pause on non-essential IT activities, to single-mindedly focus on improving technology resiliency.