

ORX Scenarios

2024 Scenario Process Maturity Matrix

Introduction

Developed as part of the 2024 Scenario Research and Benchmarking Study, the Scenario Process Maturity Matrix is a new matrix covering all key stages of the end-to-end scenario process. The matrix was designed to enable institutions to accurately self-assess and identify where they stand on the scenario process maturity curve and help determine potential areas for development and improvement.

Overview of the matrix

The matrix is divided into three main sections corresponding to three broad scenario process areas:

1. **Portfolio Coverage and Maintenance**, defined as the process of ensuring that an institution's scenario portfolio is up to date, reflects its current risk exposures, and provides adequate coverage of material risks.
2. **Scenario Development and Assessment**, defined as the process of creating, assessing, and validating a scenario, including its qualitative assumptions and quantitative components.
3. **Optimisation**, defined as the process of driving efficiencies and reducing siloes in scenario execution at a resourcing, data, systems, and process level.

Full definitions of all three areas can be found in the matrix from page 3 onwards.

These three areas represent the highest-level groupings of scenario process stages in the matrix and are therefore termed "tier 1" process areas. The matrix breaks these three tier 1 areas down into a series of increasingly granular tier 2 and tier 3 scenario process sub-areas to enable detailed and informative benchmarking, inform scenario process enhancement initiatives in specific areas, and support insightful management reporting and analysis.

How to use the matrix

The matrix can be used to assess the maturity of an institution's current scenario practice in each tier 1 area and their corresponding sub-areas on a scale of 1 to 3 by selecting the level of maturity and corresponding criteria that best describes current internal practice. The three levels of maturity are:

- **Level 1 (foundational):** The building blocks of practice are either lacking or emerging, with processes, standards, and responsibilities often or not always defined, embedded, or operational.
- **Level 2 (developing):** Practice is broadly robust, with processes, standards, and responsibilities being relatively well defined, somewhat embedded, and generally operational.

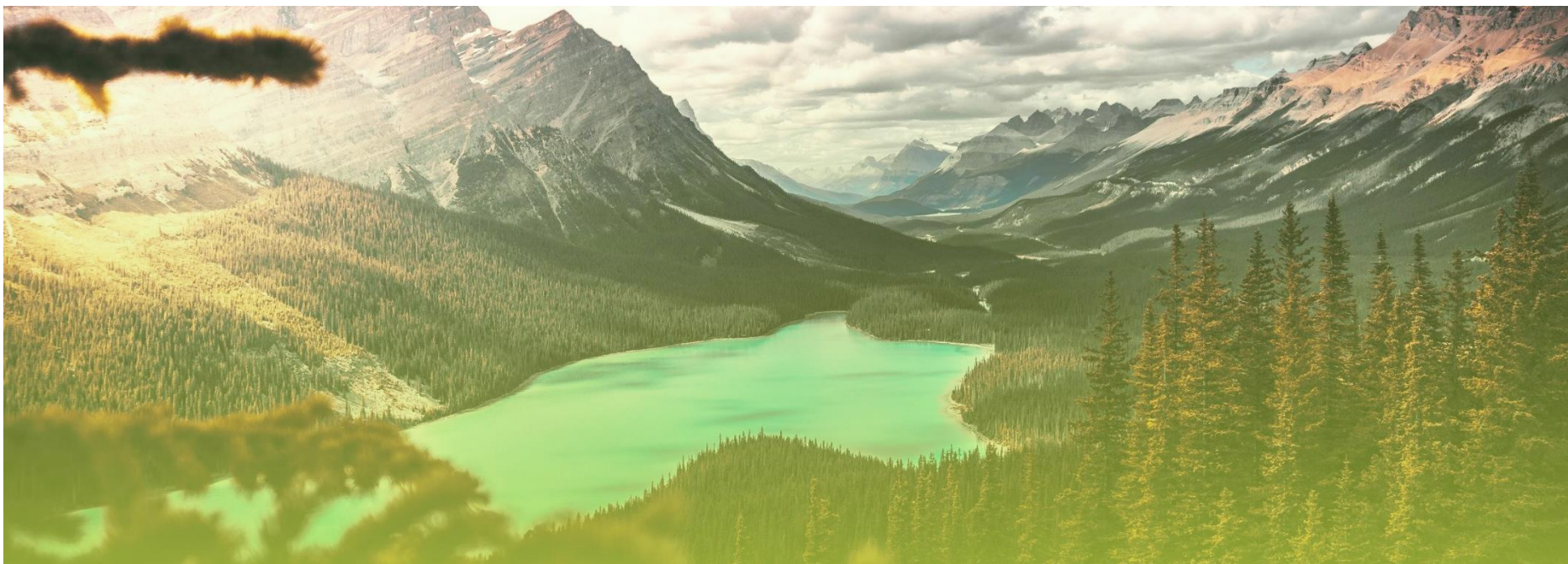
- **Level 3 (advanced):** Practice is mature, with processes, standards, and responsibilities being fully defined, well embedded, and reliably operational.

To achieve a level of maturity, all criteria within the level must be met. If the process area described in a given row is not applicable to an institution, level 1 should be selected.

Institutions that participated in the 2024 Scenario Research and Benchmarking Survey have been provided with their institution's bespoke Individual Benchmark Report comparing their self-assessment responses to the rest of the industry, institutions operating in the same sector, institutions within their headquartered region, institutions of a similar size, and, if requested, selected peer institutions. Recognising that maturity levels in any given area are likely to vary over time, the matrix is provided to enable subscribers to benchmark their practice at any time and support continual enhancements to their scenario process.

Future benchmarking

Future benchmarking exercises may be conducted by ORX Scenarios in 2025 and 2026 to focus on more granular benchmarking by developing detailed versions of each of the three main tier 1 areas in isolation. Depending on subscriber feedback on the matrix, future iterations of each area of the matrix may be modified and re-calibrated to ensure the overall structure of the matrix reflects industry views of current practice and the criteria at each level are appropriate.



2024 Scenario Process Maturity Matrix

Tier 1 process component	Tier 2 process component	Tier 3 process component		
		Level 1	Level 2	Level 3
<p>Portfolio coverage and maintenance</p> <p><i>Definition:</i> Portfolio coverage and maintenance is the process of ensuring that an institution’s scenario portfolio is up to date, reflects its current risk exposures, and provides adequate coverage of material risks. It involves three activities focused on risk identification and scenario selection:</p> <ul style="list-style-type: none"> ▪ The risk identification and prioritisation component of the annual/periodic planning exercise ▪ The periodic scenario review, re-fresh, and reassessment cycle, the frequency of which may be dependent on the purpose and materiality of the scenario ▪ On-going monitoring of exposures through trigger-based reviews 	<p>Cycle planning, scenario identification and risk coverage</p> <p><i>Definition:</i> The extent to which risks are comprehensively identified in the scenario programme and cover all material, emerging and business priority risks, with identification and selection governance and review being supported by the right level of business and senior engagement.</p>	<p>Coverage and comprehensiveness of identification</p> <p><i>Maturity criteria:</i> Identification and selection are unstructured or incomplete or may be limited to those risks advised by regulators, with significant gaps in coverage of material risks and very little or no consideration of business priority risks. Scenario identification is generally reactive rather than proactive.</p> <p>Coordinated identification of material operational risk concerns and priorities by risk teams and scenario programmes is largely non-existent.</p> <p>Additionally, there is minimal linkage to:</p> <ul style="list-style-type: none"> ▪ Top/material risks ▪ Relevant internal and external risk taxonomies ▪ Other risk framework processes 	<p>Coverage and comprehensiveness of identification</p> <p><i>Maturity criteria:</i> Risks required to undergo scenario analysis are identified and assessed relatively comprehensively on a periodic basis and cover the majority of material risks and some business priority risks. However, gaps in coverage exist, and/or there is the potential for better and more proactive coordination across different scenario uses and with related risk programmes (e.g. resilience/business disruption) and risk framework processes.</p> <p>Additionally, there are planning linkages to the following, albeit with the potential for better or more streamlined interaction with:</p> <ul style="list-style-type: none"> ▪ Top/material risks ▪ Relevant internal and external risk taxonomies ▪ RCSA processes 	<p>Coverage and comprehensiveness of identification</p> <p><i>Maturity criteria:</i> Risks required to undergo scenario analysis are comprehensively and proactively identified on a periodic basis and systematically cover all relevant material, emerging and business priority risks.</p> <p>Cycle planning, prioritisation and selection decisions are closely and proactively coordinated and/or integrated across different scenario uses and related risk programmes (e.g. resilience/business disruption) and risk framework processes, resulting in comprehensive coverage of:</p> <ul style="list-style-type: none"> ▪ Top/material risks ▪ Relevant internal and external risk taxonomies ▪ RCSA processes ▪ Risk appetite setting ▪ Emerging risks ▪ Business strategy and strategic priorities
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<p>Effectiveness of identification governance</p> <p><i>Maturity criteria:</i> Identification and selection governance structures are unclear and are not supported by the required level of:</p> <ul style="list-style-type: none"> ▪ 1LOD engagement (or ownership if applicable), meaning that business priority risks are often overlooked ▪ 1LOD/2LOD collaboration ▪ Senior management oversight <p>Scenario priorities are either not defined or reported to the relevant committee(s) or are reported infrequently. There is little or no formal review, challenge, and validation process, and/or the process is resource-intensive, poorly coordinated, inconsistently applied, or patchy and subjective. Committee reporting includes limited management information.</p>	<p>Effectiveness of identification governance</p> <p><i>Maturity criteria:</i> Identification and selection governance structures are relatively clear but are not always supported by the required level of:</p> <ul style="list-style-type: none"> ▪ 1LOD engagement (or ownership if applicable), meaning that business priority risks are sometimes overlooked ▪ 1LOD/2LOD collaboration ▪ Senior management oversight <p>Priorities may be reported to the appropriate committee(s) and challenged and validated at the appropriate level of seniority. However, challenge and validation could be more data-led and informed by better management information (e.g. more insight on scenario portfolio coverage versus current material risk inventory).</p>	<p>Effectiveness of identification governance</p> <p><i>Maturity criteria:</i> Identification and selection governance structures are clear and supported by:</p> <ul style="list-style-type: none"> ▪ The required level of 1LOD engagement (or ownership if applicable), meaning that business priority risks are effectively addressed in the scenario programme ▪ Effective 1LOD/2LOD collaboration ▪ Senior management oversight <p>Priorities are reported to the appropriate committee(s) and effectively challenged and validated through data-led review and decision making based on good management information.</p>
		□	□	□

	<p>Scenario review, refresh, and reassessment</p> <p><i>Definition:</i> The extent to which review, reassessment, and refresh processes are efficient and supported by robust procedures and governance.</p>	<p>Review, reassessment, and refresh framework and governance</p> <p><i>Maturity criteria:</i> Scenarios are informally reviewed on an ad hoc basis. Little consideration is given to the governance, documentation, frequency, data requirements, and efficiency of review, refresh, or reassessment.</p> <p>Execution is ineffective because the process is inconsistent, poorly coordinated, and often resource intensive, with no documented guidance, training, or procedural clarity.</p> <p>Governance is inadequate and little attempt has been made to define and enforce evidence requirements. Additionally, review and challenge of refresh decisions is minimal or non-existent, and sign-off is either poorly documented or a 'tick box' exercise.</p>	<p>Review, reassessment, and refresh framework and governance</p> <p><i>Maturity criteria:</i> Scenarios are periodically reviewed and reassessed, and triggers may be used to inform review decisions. Consideration has been given to:</p> <ul style="list-style-type: none"> ▪ The optimal frequency of review, reassessment, and refresh ▪ The potential for efficiencies in refresh, including through the introduction of differing levels of (e.g. full versus partial) refresh ▪ However, further clarity around process, terminology, and data requirements would benefit the process. <p>Execution is relatively effective but could be further improved because procedures, documentation, training, or templates are either not in place to support review and reassessment or could be improved.</p> <p>Governance of refresh and reassessment decisions could be improved by either more evidence-based rationales or more traceable (i.e. auditable) approvals and validation (e.g. at 2LOD or senior management level). Documentation and records of sign-offs are not consistently or always captured or tracked.</p>	<p>Review, reassessment, and refresh framework and governance</p> <p><i>Maturity criteria:</i> The scenario review, refresh, and reassessment process is periodic and trigger-based and is effective because of clarity on:</p> <ul style="list-style-type: none"> ▪ The optimal frequency of review, reassessment, and refresh ▪ Terminology, including the concepts of, and differences between, "refresh", "review", and "reassessment", where applicable ▪ The distinctions between differing refresh levels (e.g. partial, desktop, light-touch, full), if applicable. <p>Execution is effective because appropriate procedures, documentation, training, and templates are in place to support review, refresh, and reassessment.</p> <p>Governance and oversight of refresh and reassessment decisions are effective because they are informed by evidence-based rationales and traceable (i.e. auditable) approvals and validation (e.g. at 2LOD or senior management level). Documentation and records of signoffs are consistently captured and tracked.</p>
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		<p>Efficiency of the review, reassessment, and refresh process</p> <p><i>Maturity criteria:</i> The review, reassessment, and refresh process has not been optimised and is always resource- and time-intensive (largely because of ineffective data collection and reporting, making targeted and focused refreshes difficult). The process always involves workshoping (including in cases where an offline refresh would be sufficient).</p> <p>Driver and trigger metrics do not exist or are very limited in scope, quality or use. Refresh/reassessment templates and guidance supporting a consistent approach do not exist, and data standards governing reassessment decisions are vague or ill defined.</p> <p>No consideration has been given to whether review frequency should vary depending on the uses and scopes of different scenarios.</p>	<p>Efficiency of the review, reassessment, and refresh process</p> <p><i>Maturity criteria:</i> The review, reassessment, and refresh process has been optimised to some extent, including by only conducting workshops when necessary to reassess scenarios (although the conditions under which a workshop may or may not be needed are not always clearly defined).</p> <p>Refresh tends to focus on relevant information, although driver and trigger metrics could be improved to ensure more targeted reassessments.</p> <p>Data requirements supporting refresh rationales and refresh templates exist but are not always applied. Where no changes to the relevant risk profile are identified, the rationale is documented, although supporting evidence is sometimes lacking or incomplete.</p> <p>The frequency of review, reassessment and refresh may vary depending on the uses and scopes of different scenarios, although monitoring may not be sufficiently effective to ensure the right level and timeliness of review, reassessment, and refresh.</p>	<p>Efficiency of the review, reassessment, and refresh process</p> <p><i>Maturity criteria:</i> The review, reassessment, and refresh process has been optimised by defining and communicating the conditions under which a workshop may, or may not, be necessary and by ensuring that, where possible, refresh focuses on relevant information only (e.g. data signalling a rise in a specific cost driver).</p> <p>Trigger processes are in place, and effective data monitoring and pooling ensure that resourcing pressures are minimised.</p> <p>Refresh/reassessment templates exist to ensure clarity on expectations, and data standards ensure the quality and precision of reassessments. Where no changes to the relevant risk profile are identified, the rationale and the required supporting evidence are effectively documented.</p> <p>Detailed consideration has been given to whether the frequency of review, reassessment, and refresh is appropriate and tailored to different scenarios and levels of risk materiality, including different scenario uses (e.g. capital, stress testing), scopes (business line versus group) and severities or types of impacts (e.g. financial, customer, reputational, strategic). Monitoring is in place to ensure refresh is conducted at the right time.</p>
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	<p>Trigger use, governance, and automation</p> <p>Definition: The extent to which triggers, if used, are well-defined, metric-based, well governed, and supported by appropriate automation.</p>	<p style="text-align: center;"><input type="checkbox"/></p> <p>Trigger use and process</p> <p>Maturity criteria: Triggers are either not formally used or are poorly implemented.</p> <p>Data standards supporting effective trigger metrics are not or ill defined, and little or no effort is made to link triggers to either scenario planning and prioritisation or other risk processes, material events or changes in risk profile.</p> <p>Improvements in all of the following areas are needed:</p> <ul style="list-style-type: none"> ▪ The trigger process could help to better identify or prioritise scenarios that may need to be re-freshed ▪ The trigger process could better signal portfolio gaps ▪ The trigger process could drive refresh efficiencies by signalling the type and level of reassessment needed ▪ The trigger process could ensure a culture of dynamic risk management <p>Level 1 also applies if you do not use triggers.</p> <p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p> <p>Trigger use and process</p> <p>Maturity criteria: The review, refresh, and reassessment process is supplemented by the use of a trigger-based approach. However, triggers may be only partially implemented, meaning that not all trigger breaches result in a scenario re-assessment or in a timely review. There is potential to expand and refine the range of metrics used to ensure full coverage and the right level of trigger granularity.</p> <p>Improvements in one or two of the following areas are needed:</p> <ul style="list-style-type: none"> ▪ The trigger process could help to better identify or prioritise scenarios that may need to be refreshed ▪ The trigger process could better signal gaps in portfolios ▪ The trigger process could drive further refresh efficiencies by signalling the type and level of reassessment needed ▪ The trigger process could ensure a culture of dynamic risk management <p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p> <p>Trigger use and process</p> <p>Maturity criteria: A formal trigger process is in place and is based on an agreed and well-defined list of data-driven metrics defined at an appropriate level of granularity and comprising of a range of internal and external data. A clear and well understood organisational definition of the trigger concept also exists.</p> <p>The trigger process is effective in helping to identify or prioritise scenarios that may need to be refreshed, signal gaps in portfolios, optimise refresh efficiencies by signalling the type and level of reassessment needed, and ensure a culture of dynamic risk management. Additionally, triggers may be designed to be linked to loss drivers, allowing for efficient reassessment of changes in severity.</p> <p style="text-align: center;"><input type="checkbox"/></p>
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		<p>Trigger governance</p> <p>Maturity criteria: Little or no consideration has been given to defining roles and responsibilities for trigger processes (breach monitoring and reporting), causing the trigger monitoring and reporting process to be unstructured and infrequent.</p> <p>There is little or no 1LOD involvement, poor 1LOD/2LOD collaboration, and limited senior management oversight.</p> <p>Level 1 also applies if you do not use triggers.</p>	<p>Trigger governance</p> <p>Maturity criteria: Management and governance of the trigger process could be enhanced through greater formalisation of 1LOD/2LOD roles and responsibilities (including for trigger reporting) and through more effective (i.e. data-driven) and/or more frequent review meetings to monitor trigger breaches.</p> <p>The required level of 1LOD engagement (or ownership if applicable) has yet to be achieved, with 1LOD/2LOD collaboration and senior management oversight also requiring some improvement.</p> <p>An organisational trigger framework has yet to be put in place, or is emerging, to support use of common triggers across relevant risk management processes and routines.</p>	<p>Trigger governance</p> <p>Maturity criteria: A formal trigger governance and reporting process supported by documented expectations and standards are in place for monitoring, reporting, and acting on trigger breaches, with roles and responsibilities assigned for trigger processes including trigger monitoring and reporting (typically in both the 1LOD and 2LOD).</p> <p>The required level of 1LOD engagement (or ownership if applicable) has been achieved, as has 1LOD/2LOD collaboration and senior management oversight of the trigger process.</p> <p>An organisational trigger framework exists to support use of common triggers across relevant risk management processes and routines.</p>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<p>Trigger automation and integration</p> <p>Maturity criteria: If triggers are used, the trigger process (monitoring, reporting, action tracking) is fully or largely manual, meaning that trigger processes are not automated (i.e. not supported by digital workflows and data pooling and reporting).</p> <p>Additionally, little effort has been made to integrate data from other</p>	<p>Trigger automation and integration</p> <p>Maturity criteria: The trigger process (monitoring, reporting, action tracking) is partially automated and integrated, meaning that:</p> <ul style="list-style-type: none"> ▪ Components of the trigger process are automated and are supported by digital workflows (e.g. task man- 	<p>Trigger automation and integration</p> <p>Maturity criteria: Opportunities for automating and integrating the trigger process have been fully leveraged, ensuring that all key trigger process steps (monitoring, reporting, action tracking) have been optimised. Specifically:</p> <ul style="list-style-type: none"> ▪ Automated workflows (e.g. task management tool to

		<p>risk processes to support and feed into trigger processes, making trigger data collection inefficient and resource intensive and trigger data pooling, reporting, and visualisation very limited or non-existent.</p>	<p>agement tool to track trigger-related actions), although manual intervention and inputs are still significant.</p> <ul style="list-style-type: none"> Trigger metrics are integrated to some extent with data pooled from other internal risk processes (e.g. KRIs, RCSAs, loss data), although pooling, reporting, and visualisation of the data is not optimal. 	<p>track trigger-related actions) are in place to manage the trigger process, minimising manual intervention and inputs.</p> <ul style="list-style-type: none"> Triggers are integrated with data and metrics from other risk management programmes (e.g. KRIs, loss data, RCSA results), allowing for effective pooling, reporting, and visualisation of trigger data.
	<p>Scenario retirement and archiving</p> <p>Definition: The extent to which the scenario retirement process follows established data-driven standards and governance procedures and leads to well managed scenario archives.</p>	<p>Retirement standards, governance, and process</p> <p>Maturity criteria: The relevance or obsolescence of scenarios is not assessed regularly or by means of a structured, consistent, and documented process based on defined requirements for data-driven evidence.</p> <p>Governance of retirement and archiving decisions is ad hoc, not documented, and often inconsistent, with little review, challenge, and recording of retirement decisions.</p>	<p>Retirement standards, governance, and process</p> <p>Maturity criteria: Obsolete scenarios are retired using a process that is well-defined but not formally or fully documented. Consideration of scenarios that have reached obsolescence is governed by a periodic and/or ad hoc process, although that process could be made more efficient by defining a clearer rationale and criteria for flagging and reviewing obsolete scenarios. Consideration is generally given to the following in identifying obsolete scenarios:</p> <ul style="list-style-type: none"> Changes and innovations in the business Changes in risk profile The potential for consolidation with another scenario. <p>The above information and criteria could, however, be more regularly monitored and/or considered.</p>	<p>Retirement standards, governance, and process</p> <p>Maturity criteria: Obsolete scenarios are identified and managed by a documented and structured process that defines the conditions and requirements for flagging obsolete scenarios on both a periodic and ad hoc basis based on data-driven evidence of regularly monitored items including but not limited to:</p> <ul style="list-style-type: none"> Changes and innovations in the business Changes in risk profile The potential for consolidation with another scenario. <p>There is clear accountability for the identification of obsolete scenarios (with ownership sitting in the 1LOD or 2LOD as appropriate). The steps involved in then validating obsolete scenarios are also supported by a consistent and efficient reporting process that typically involves</p>

			Governance of retirement decisions may be in place but may not be formalised or consistent, although retirement approvals are generally documented, and some review is performed to ensure the validity of retirement decisions.	seeking approval for archiving from relevant risk owners and/or management and reporting of the archiving decision at a relevant committee level.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Archiving and record-keeping <i>Maturity criteria:</i> Retired scenarios are either not archived or not archived in easily accessible records. Justifications and rationales for archiving decisions are not documented and decisions are not supported by data-driven evidence and formal governance.	Archiving and record-keeping <i>Maturity criteria:</i> Retired scenarios may be retained and are usually easily available and accessible in appropriate archives. However, records do not always include the documentation and relevant justifications and rationales supporting the archiving decision, or the documentation could be either more comprehensive or more data driven. Retirement governance steps exist but could be further formalised.	Archiving and record-keeping <i>Maturity criteria:</i> Retired scenarios are retained in relevant and easily accessible scenario archives. These records include documented evidence of the data-driven rationales, justifications, and governance steps supporting the retirement decision.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tier 1 process component	Tier 2 process component	Tier 3 process component		
		Level 1	Level 2	Level 3
Scenario development and assessment Definition: Scenario development and assessment is the process of creating, assessing, and validating a scenario, including its qualitative assumptions and quantitative components. Specifically, the process involves 3 activities focused on workshop preparation, storyline and qualitative development, and quantification: <ul style="list-style-type: none"> Assessment and workshop planning, including communication of expectations and circulation of workshop materials (e.g. data packs, relevant analysis) The execution of the storyline development pro- 	Development and assessment framework and governance Definition: The extent to which scenario creation and assessment are supported by a well-documented framework, a set of user-friendly templates and documentation, effective governance, and training.	Framework standardisation and guidance Maturity criteria: There is limited standardisation of, and guidance on, the recommended or approved approach to development and assessment, with framework documentation providing little or no guidance on or support with: <ul style="list-style-type: none"> The approach to qualitative development and quantitative assessment Data quality standards Governance, including guidance on how to perform effective evidence-based review, challenge, and validation. 	Framework standardisation and guidance Maturity criteria: The approach to development and assessment is broadly standardised and has been captured in framework documentation, which provides broad guidance on and support with: <ul style="list-style-type: none"> The approach to qualitative development and quantitative assessment Data quality standards Governance, including guidance on how to perform effective evidence-based review, challenge, and validation. However, there is room for more clarity and detail to aid the 1LOD or other scenario stakeholders in one or more of the three areas listed above.	Framework standardisation and guidance Maturity criteria: The approach to development and assessment is supported by a standardised and well documented framework that provides detailed procedure-driven guidance on: <ul style="list-style-type: none"> Method, including the approach to qualitative development and quantitative assessment supported by well-defined and communicated guidance and processes suited to scenario usage Data quality, including through the provision of guidance on the standardised reference data that should support consistent (e.g. impact, driver, control) inputs Governance, including guidance on how to perform effective evidence-based review, challenge, and validation.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<p>cess, i.e. the qualitative component of the scenario</p> <ul style="list-style-type: none"> The execution of the scenario estimation process, i.e. the quantitative component of the scenario 	<p>Templates and documentation</p> <p>Maturity criteria: Templates supporting development and assessment such as workbooks and data packs either do not exist or are:</p> <ul style="list-style-type: none"> Inconsistently or rarely used Not fit-for-purpose Not standardised Not easily accessible or not available in user-friendly formats. 	<p>Templates and documentation</p> <p>Maturity criteria: Templates supporting development and assessment such as standardised workbooks and/or data packs may exist but are either not consistently applied or could be more effective and better formatted to drive more consistent preparation and execution.</p>	<p>Templates and documentation</p> <p>Maturity criteria: Templates supporting development and assessment, including standardised workbooks and data pack templates, exist and are consistently used. They are likely to be regularly updated, readily available, and consistently used in digital form and, where appropriate, used for more than one scenario use/purpose.</p>
	□	□	□
	<p>Scenario development and assessment governance and oversight</p> <p>Maturity criteria: Oversight of scenario development and quantitative assessment outcomes is inefficient and makes poor use of data-driven validation and stakeholder time because:</p> <ul style="list-style-type: none"> Review, challenge, and validation are often not performed consistently and on the basis of robust evidence Consistent governance standards and processes are not applied, with assessment objectives, expectations, standards of evidence, and accountabilities being ill or not defined. 	<p>Scenario development and assessment governance and oversight</p> <p>Maturity criteria: Oversight of scenario development and quantitative assessment outcomes is relatively efficient and effective but could make better use of data-driven validation and stakeholder time because:</p> <ul style="list-style-type: none"> Review, challenge, and validation are often but not always performed consistently and on the basis of robust evidence or using standardised templates, whether executed as phased processes alongside workshoping or as standalone processes Consistent governance standards and processes are not always consistently applied in line with defined 	<p>Scenario development and assessment governance and oversight</p> <p>Maturity criteria: Oversight of scenario development and quantitative assessment outcomes is efficient and effective because it makes optimal use of data-driven validation and stakeholder time due to:</p> <ul style="list-style-type: none"> Review, challenge, and validation being performed consistently based on robust evidence and standardised templates, whether executed as phased processes alongside workshoping or as standalone processes Consistent governance standards and processes being executed in line with

		<p>Assessment governance structures are unclear and are not supported by the required level of:</p> <ul style="list-style-type: none"> ▪ 1LOD engagement (or ownership if applicable) ▪ 1LOD/2LOD collaboration ▪ Senior management oversight. 	<p>objectives, expectations, standards of evidence, and accountabilities.</p> <p>Additionally, assessment governance structures are relatively clear but are not always supported by the required level of:</p> <ul style="list-style-type: none"> ▪ 1LOD engagement (or ownership if applicable) ▪ 1LOD/2LOD collaboration ▪ senior management oversight. 	<p>defined objectives, expectations, standards of evidence, and accountabilities.</p> <p>Additionally, assessment governance accountabilities are clear and supported by:</p> <ul style="list-style-type: none"> ▪ The required level of 1LOD engagement (or ownership if applicable) ▪ effective 1LOD/2LOD collaboration ▪ senior management oversight.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<p>Training</p> <p><i>Maturity criteria:</i> Little or no training is provided to scenario stakeholders and workshop participants to ensure effective development and assessment execution. Training documentation does not exist or is very limited and neither digitised nor easily available.</p>	<p>Training</p> <p><i>Maturity criteria:</i> Training on the development and assessment approach, standards, and processes is generally provided to scenario stakeholders and workshop participants but could be more structured and consistent. High-level training documentation exists covering some aspects of the execution process in broad outline, though further guidance would be beneficial.</p>	<p>Training</p> <p><i>Maturity criteria:</i> Consistent and structured training covering the development and assessment approach, standards, and processes (including workshopping and stakeholder roles and expectations) is always provided to scenario stakeholders and workshop participants and is supported by detailed and easily accessible documentation and guidance available in digital form.</p>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<p>Data and workshopping standards</p> <p><i>Definition:</i> The extent to which established data quality standards enable effective workshop preparation and assessment, with workshopping being evidence-based, engaging, focused, and well documented.</p>	<p>Assessment data quality and standards</p> <p><i>Maturity criteria:</i> Data quality criteria for assessment are not, or are poorly, defined, resulting in ineffective workshop preparation and assessment. Specifically:</p> <ul style="list-style-type: none"> Common data categorisations aligned to either internal or wider industry taxonomies and processes tend not to be applied or are applied inconsistently Data systems used in scenario processes interact ineffectively or not at all with other risk processes The scope for benchmarking and data pooling is very limited. 	<p>Assessment data quality and standards</p> <p><i>Maturity criteria:</i> Data quality criteria for assessment are defined but not always clearly understood, resulting in inconsistent application of data standards in support of workshop preparation and assessment. Specifically:</p> <ul style="list-style-type: none"> Common data categorisations exist in the wider risk framework but are not always reflected in scenario processes, limiting the capacity to use internal data to some extent Data systems used in scenario processes interact to some extent with other risk processes and are aligned up to a point with wider industry taxonomies Benchmarking capabilities could be improved. 	<p>Assessment data quality and standards</p> <p><i>Maturity criteria:</i> Data quality criteria for assessment and workshopping are defined and enable effective workshop preparation and assessment. Specifically:</p> <ul style="list-style-type: none"> Common data categorisations have been developed Internal data categorisations are aligned with industry standards to aid benchmarking Central data warehouses linking quantitative inputs and outputs are used across all scenario-type activities and interact with other risk processes Benchmarking capabilities are robust as a result.
		□	□	□
		<p>Workshopping</p> <p><i>Maturity criteria:</i> Workshopping tends to be discussion-heavy, unfocused, and characterised by frequent disagreement and subjectivity. This is because the data used is often not relevant or meaningful and is often poorly presented or visualised. Review, challenge, and validation during workshopping are also subjective as well as time- and resource-intensive.</p>	<p>Workshopping</p> <p><i>Maturity criteria:</i> Workshopping is relatively objective and engaging. However, the data used in workshops could be either more accurate or made more meaningful through use of better formats for presenting or visualising relevant information and trends.</p> <p>Use of more accurate or better formats could also help further reduce bias, ensure more focused</p>	<p>Workshopping</p> <p><i>Maturity criteria:</i> Workshopping is made objective and engaging through the effective presentation of relevant, accurate and meaningful internal and external data. Data is presented using dashboards or other visualisations of relevant qualitative and quantitative information and trends (e.g. internal loss examples and external loss examples as reference points for scenario narrative creation).</p>

		<p>Additionally, little or no effort is made to distinguish between the process, documentation, requirements, and participants of qualitative and quantitative workshops.</p> <p>Workshops are not or not consistently minuted. Where minutes exist, they lack detail, are not easily accessible, and are rarely used or referenced by relevant stakeholders. They are not effectively used for driving appropriate follow-up actions.</p>	<p>workshopping (by targeting relevant changes to specific scenario components only, where appropriate), and allow for more streamlined review, challenge, and validation during workshopping.</p> <p>Additionally, the distinction between the process, documentation, requirements, and participants of qualitative and quantitative workshops can sometimes be unclear or not consistently applied, with stakeholders either not always understanding or not always implementing the objectives and expectations of each through effectively documented procedures.</p> <p>Workshop minutes exist but could be either more detailed, more easily accessible, or better used by relevant stakeholders. They could also be more effectively or more consistently used and referenced for driving appropriate follow-up actions.</p>	<p>This enables focused workshopping (i.e. targeting relevant changes to specific scenario components only, where appropriate) and evidence-based review, challenge, and validation during workshopping.</p> <p>Additionally, the distinction between the process, documentation, requirements, and participants of qualitative and quantitative workshops is clear and consistently applied, with stakeholders understanding and implementing the objectives and expectations through effectively documented procedures.</p> <p>Workshop minutes are detailed, easily accessible (including in digital form), frequently used by relevant stakeholders, and effective in driving appropriate follow-up actions.</p>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<p>Methodology: qualitative development and quantitative assessment</p> <p>Definition: The extent to which qualitative development and quantification are standardised, data-driven, well governed, and, where appropriate, used for a range of risk management and other non-capital purposes.</p>	<p>Storyline development</p> <p>Maturity criteria: Storylines are often not realistic or layered because narratives are often lacking in:</p> <ul style="list-style-type: none"> ▪ Adequate descriptions of causal and driving factors ▪ Adequate control environment considerations ▪ An adequately defined event with some impacts and consequences. <p>The storyline development process is inefficient because:</p> <ul style="list-style-type: none"> ▪ Little use is made of a sufficiently broad range of inputs, including existing storylines and narrative inputs from other risk processes (e.g. RCSAs) and external narratives. ▪ Responsibilities for storyline development are unclear. ▪ There is no or very little use and development of common storylines. ▪ Storylines provide no or very little insight used for risk management and other non-capital purposes. Storyline development rarely leads to management actions where relevant. 	<p>Storyline development</p> <p>Maturity criteria: Storylines are usually realistic and layered because narratives include most of the following:</p> <ul style="list-style-type: none"> ▪ Descriptions of some causal and driving factors ▪ Some control environment considerations ▪ A defined event with some impacts and consequences. <p>The storyline development process could be made more efficient through:</p> <ul style="list-style-type: none"> ▪ Better use of a broader range of inputs, including existing storylines and narrative inputs from other risk processes (e.g. RCSAs) and external narratives. ▪ Clearer responsibilities for storyline development. ▪ Increased use and development of common storylines. <p>Where applicable, storylines may provide some insight used for risk management and other non-capital purposes, such as when storylines reveal control deficiencies requiring remediation. Storyline development can sometimes lead to management actions where relevant.</p>	<p>Storyline development</p> <p>Maturity criteria: Storylines are insightful, realistic, and sufficiently layered because they include:</p> <ul style="list-style-type: none"> ▪ Descriptions of causal and driving factors ▪ Control environment considerations ▪ A clearly scoped event combining impacts and consequences. <p>The storyline development process is efficient because:</p> <ul style="list-style-type: none"> ▪ A range of inputs, including existing storylines (including from different scenario uses) and narrative inputs from other risk processes (e.g. RCSAs) and external narratives, are used. ▪ Responsibilities for storyline development are clearly defined and adhered to. ▪ Where applicable, base-line/common storylines exist and are shared across the organisation. <p>Where applicable, storylines provide insight used for risk management and other non-capital purposes, such as when storylines reveal control deficiencies requiring remediation. Therefore, storyline development always leads to management actions where relevant.</p>
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	□	□	□
	<p>Estimation methodology and scoping</p> <p>Maturity criteria: An ad hoc approach to quantitative assessment exists, making assessment outcomes inconsistent and unreliable, with many stakeholders having little understanding of most of the following:</p> <ul style="list-style-type: none"> ▪ Whether to use a full distribution or point estimate approach ▪ Whether or not to estimate frequency and, if estimated, how many frequencies to estimate and what thresholds to apply ▪ Whether or not to estimate severity using predefined thresholds ▪ Whether component-based rather than gross severity estimation is more appropriate ▪ How to calibrate severity and frequency ▪ How to select and, where appropriate, aggregate the right levels (e.g. business unit, geography, risk/event type) determining the scope of the scenario to ensure material risks are assessed and quantified at the right level (with global/group- 	<p>Estimation methodology and scoping</p> <p>Maturity criteria: A broadly standardised approach to quantitative assessment is usually applied, making assessment outcomes relatively consistent and reliable, with the majority of stakeholders having some understanding of most of the following:</p> <ul style="list-style-type: none"> ▪ Whether to use a full distribution or point estimate approach ▪ Whether or not to estimate frequency and, if estimated, (1) how many frequencies to estimate, (2) what thresholds to apply, and (3) whether to use fully standardised frequencies based on pre-defined values or partially standardised values permitting entities to use frequencies within a given range ▪ Whether or not to estimate severity using predefined thresholds ▪ Whether component-based or gross severity estimation is more appropriate ▪ How to calibrate severity and frequency ▪ How to select and, where appropriate, aggregate the right levels (e.g. business unit, geography, risk/event 	<p>Estimation methodology and scoping</p> <p>Maturity criteria: A standardised approach to quantitative assessment is applied to ensure production of consistent and reliable data-driven outcomes, with all relevant stakeholders understanding:</p> <ul style="list-style-type: none"> ▪ Whether to use a full distribution or point estimate approach ▪ Whether or not to estimate frequency and, if estimated, (1) how many frequencies to estimate, (2) what thresholds to apply, and (3) whether to use fully standardised frequencies based on pre-defined values or partially standardised values permitting entities to use frequencies within a given range ▪ Whether or not to estimate severity using predefined thresholds ▪ Whether component-based or gross severity estimation is more appropriate ▪ How to calibrate severity and frequency ▪ The process for selecting and, if applicable, aggregating the right levels (e.g. business unit, geography, risk/event type) to deter-

		<p>wide scenarios posing significant challenges)</p>	<p>type) to determine the scope of the scenario and ensure material risks are assessed at the right level (including at a global/group-wide level)</p> <p>If estimation is based on data-driven XOI (Exposure, Occurrence, Impact) assessments, the methodology is in the process of being embedded and is not always applied, producing reliable outcomes in most but not all cases.</p>	<p>mine the scope of the scenario and ensure material risks are assessed at the right level (including at a global/group-wide level)</p> <p>Where estimation is based on data-driven XOI assessments, the methodology is well embedded, consistently applied, and produces reliable outcomes.</p>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<p>Risk drivers</p> <p>Maturity criteria: A set of risk drivers either does not exist or, if it does, drivers are poorly defined, not standardised, and not supported by clear guidance on how to apply them in estimating frequency and severity objectively.</p> <p>Data-driven driver metrics are sparsely used or non-existent.</p> <p>Drivers are rarely discussed during scenario creation and storyline development, meaning that stakeholders typically do not understand or debate the factors driving the narrative.</p> <p>Risk driver considerations do not feed into risk management actions.</p>	<p>Risk drivers</p> <p>Maturity criteria: A set of risk drivers exists, although they could be either:</p> <ul style="list-style-type: none"> ▪ Better defined ▪ More standardised ▪ Or supported by clearer guidance on how to apply them in estimating and calibrating frequency and severity objectively <p>Additionally, driver metrics could be supported by more robust data-driven evidence when estimating impacts.</p> <p>Drivers are not always discussed during scenario creation and storyline development, meaning that stakeholders may not always understand or debate the factors driving the narrative.</p>	<p>Risk drivers</p> <p>Maturity criteria: A well-defined and standardised set of consistently applied risk drivers exists, together with guidance on how to apply them in estimating and calibrating frequency and severity objectively.</p> <p>Where appropriate, drivers are set at the right level of granularity, including at different levels of granularity if used for more than one purpose in scenarios and other risk processes.</p> <p>Driver metrics are based on data-driven evidence to support objective impact estimation.</p> <p>Drivers are consistently discussed during scenario creation and storyline development to ensure stakeholders understand and debate the factors driving the narrative.</p>

			More or better use could be made of risk driver considerations in driving management actions where appropriate.	Additionally, drivers may be designed to be linked to triggers, allowing for efficient reassessment of changes in exposure. Risk driver considerations lead to management actions where appropriate.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<p>Impacts</p> <p>Maturity criteria: Impact data is not, or not consistently, categorised, limiting the potential for objective data-driven impact estimations and review/challenge.</p> <p>Data-driven impact estimations are not informed by easily accessible real-world dollar values. This may be because no internal repositories detailing specific cost components exist.</p> <p>Financial and non-financial impacts are superficially discussed during scenario creation and assessment. Stakeholders are often not provided with the information or data necessary to understand the impact consequences flowing from the narrative.</p> <p>Little management follow-up action occurs once impacts are identified and assessed.</p>	<p>Impacts</p> <p>Maturity criteria: Impacts are generally categorised consistently, although the underlying impact categories may not always align with wider impact/loss reporting.</p> <p>Data-driven impact estimations could be more consistently informed by real-world dollar values. These values are held in internal repositories detailing some cost components, meaning that impact estimations can sometimes result in time- and resource-intensive debate.</p> <p>Financial and non-financial impacts are generally discussed during scenario creation and assessment. However, stakeholders may not have all the information or data necessary to understand the impact consequences flowing from the narrative.</p> <p>Financial and non-financial impact assessment can sometimes lead to management actions where appropriate.</p>	<p>Impacts</p> <p>Maturity criteria: Impact categorisations have been well-defined and standardised at the right level of granularity, including through use of impact categories that align with wider impact reporting and/or common impact matrices.</p> <p>Objective data-driven impact estimations are informed by real-world dollar values held in easily accessible and regularly updated internal repositories detailing specific cost components, allowing objective data-driven challenge.</p> <p>Financial and non-financial impacts are consistently discussed during scenario creation and assessment to ensure stakeholders understand and debate the consequences flowing from the narrative.</p> <p>Financial and non-financial impact assessment leads to management actions where appropriate.</p>

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Tier 1 process component	Tier 2 process component	Tier 3 process component		
		Level 1	Level 2	Level 3
<p>Optimisation</p> <p><i>Definition:</i> Optimisation refers to the process of driving efficiencies and reducing siloes in scenario execution at a resourcing, data, systems, and process level to reduce effort, drive better business engagement, and improve intra- and inter-programme scenario analysis inputs and outputs as well as synergies across lines of defence and with other risk processes.</p>	<p>Integration</p> <p><i>Definition:</i> The extent to which the efficiency, effectiveness, and value of scenario analysis are maximised through well embedded sharing of resources and effective use of scenario analysis outputs leveraged for all relevant uses applicable to the institution, including non-capital uses.</p>	<p>Use and process integration</p> <p><i>Maturity criteria:</i> The potential for efficient, effective, and value-adding scenario analysis has yet to be realised because:</p> <ul style="list-style-type: none"> ▪ There is no or limited sharing of resource (people, documentation, data) to (1) improve input quality, (2) tackle siloes (between risk processes, systems and lines of defence), and (3) reduce duplication of effort at key stages of the scenario process, with common storylines, common identification and assessment tools (e.g. impact, severity and plausibility matrices), and shared risk, control and impact information and repositories having yet to be developed. ▪ No consideration has been given to leveraging scenario analysis outputs for a wider range of purposes applicable to the institution, including the following non-capital uses: <ul style="list-style-type: none"> ○ Material risk management (identification/assessment/reporting) ○ Resilience management (including business continuity management) 	<p>Use and process integration</p> <p><i>Maturity criteria:</i> The efficiency, effectiveness, and value of scenario analysis is improving but has yet to be maximised because:</p> <ul style="list-style-type: none"> ▪ There is some sharing of resource (people, documentation, data) that (1) is improving input quality, (2) is reducing siloes (between risk processes, systems and lines of defence), and (3) is reducing duplication of effort at key stages of the scenario process, with common storylines, common identification and assessment tools (e.g. impact, severity and plausibility matrices), and shared risk, control and impact information and repositories emerging to enhance practice. ▪ Some consideration is being given to leveraging scenario analysis outputs for a wider range of purposes applicable to the institution, including the following non-capital uses: <ul style="list-style-type: none"> ○ Material risk management (identification/assessment/reporting) ○ Resilience management (including business continuity management) 	<p>Use and process integration</p> <p><i>Maturity criteria:</i> The efficiency, effectiveness, and value of scenario analysis are maximised because of:</p> <ul style="list-style-type: none"> ▪ Well embedded sharing of resource (people, documentation, data) that (1) drives input quality, (2) minimises siloes (between risk processes, systems and lines of defence), and (3) minimises duplication of effort at key stages of the scenario process, with common storylines, common identification and assessment tools (e.g. impact, severity and plausibility matrices), and shared risk, control and impact information and repositories being common practice. ▪ Highly effective scenario analysis outputs leveraged for all relevant uses applicable to the institution, including the following non-capital uses: <ul style="list-style-type: none"> ○ Material risk management (identification/assessment/reporting) ○ Resilience management (including business continuity management)

		<ul style="list-style-type: none"> ○ Emerging risk management ○ Strategic risk management ○ Pre-emptive control enhancements ○ Recovery and resolution planning ○ Risk appetite setting and/or assessment ○ Supporting change and innovation. 	<ul style="list-style-type: none"> ○ Emerging risk management ○ Strategic risk management ○ Pre-emptive control enhancements ○ Recovery and resolution planning ○ Risk appetite setting and/or assessment ○ Supporting change and innovation. 	<ul style="list-style-type: none"> ○ Emerging risk management ○ Strategic risk management ○ Pre-emptive control enhancements ○ Recovery and resolution planning ○ Risk appetite setting and/or assessment ○ Supporting change and innovation.
		□	□	□
	<p>Systems and digitisation</p> <p><i>Definition:</i> The extent to which the scenario process is fully supported by a user-friendly and effective system integrated with other internal data repositories, enabling efficient data collection and pooling, digitisation of documentation, and effective reporting and tracking of management actions.</p>	<p>Systems support and data integration</p> <p><i>Maturity criteria:</i> Little systems support is in place in the scenario programme to support alignment with other internal data repositories and sources and use of common data standards or categorisations. Specifically:</p> <ul style="list-style-type: none"> ▪ Data inputs and outputs in the scenario programme are not aligned to wider risk data categorisations and taxonomies, meaning that scenario programme integration with other risk framework processes is limited or non-existent. ▪ Data collection in support of scenario identification, assessment, and workshopping is largely manual and resource-intensive, and data quality is low. ▪ Digitisation of scenario documentation is minimal, with 	<p>Systems support and data integration</p> <p><i>Maturity criteria:</i> The scenario process is supported by a relatively effective system. However, the system used is not fully integrated with other internal data repositories and sources. This may be because while a group risk system/GRC tool is in place, there is either no scenario object embedded within it or there is potential for more centralised data sharing to support process synergies through greater integration of a scenario-specific module.</p> <p>The current scenario system:</p> <ul style="list-style-type: none"> ▪ Ensures data inputs and outputs in the scenario programme are partially aligned to wider risk data categorisations and taxonomies, meaning that integration with other risk framework processes could be further enhanced. 	<p>Systems support and data integration</p> <p><i>Maturity criteria:</i> The scenario process is fully supported by a user-friendly and effective system integrated with other internal data repositories and sources. This system may be a scenario object embedded in a group risk system/GRC tool. This allows:</p> <ul style="list-style-type: none"> ▪ Scenario analysis inputs and outputs to link effectively with other risk framework components, enabling automated pooling and use of internal data in scenario identification and assessment (including RCSA, loss and near miss data). ▪ Scenario data collection to be fully or largely automated, minimising duplication of effort and manual errors and ensuring high levels of data quality.

		<p>data packs being prepared manually, and data visualisations are not used to support workshoping.</p>	<ul style="list-style-type: none"> ▪ Reduces duplication of effort to some extent, although scenario data collection may still be partially manual and data quality could be further improved. ▪ Enables some digitisation of scenario execution documentation (e.g. data packs, workbooks), although aggregated visualisations of disparate sources for workshoping are not yet or not fully developed. 	<ul style="list-style-type: none"> ▪ Scenario execution documentation (e.g. data packs, workbooks) to be integrated and digitised as far as possible (although external data may still need to be inputted manually), and insightful aggregated visualisations of disparate internal sources used for workshoping. <p>The scenario system or object is also likely to enable effective reporting and tracking of shared management actions across risk processes (including actions arising from scenario activity), with, e.g., scenario assessment outcomes being closely linked to control enhancement activities and ongoing material risk assessments.</p>
		□	□	□
	<p>Automation</p> <p><i>Definition:</i> The extent to which scenario workflows have been optimised by automating all or most of the scenario execution process from identification and portfolio review to assessment and execution and review and governance.</p>	<p>Process and workflow automation</p> <p><i>Maturity criteria:</i> Scenario workflow processes are fully or largely manual, with no or little use being made of automated task assignment and collaboration management capabilities to optimise the scenario execution process, including automated assignment of tasks such as reviews and sign-offs of scenario assessment outcomes.</p> <p>A tool or platform for achieving automation-driven efficiencies in the end-to-end execution process has not been implemented.</p>	<p>Process and workflow automation</p> <p><i>Maturity criteria:</i> Scenario workflow processes have been partially automated with a view to optimising scenario execution. However, some steps of the execution process have yet to be improved through automation, meaning that assignment and monitoring of tasks such as review and sign-off are likely to remain manual to some extent.</p> <p>A tool or platform for achieving these automation-driven efficiencies in the end-to-end execution process has been implemented. However, challenges remain because it involves a degree of manual input that limits its value.</p>	<p>Process and workflow automation</p> <p><i>Maturity criteria:</i> Scenario workflow automation is in place to optimise the scenario execution process from identification and portfolio review (e.g. trigger automation) to assessment and execution (through automated task performance and action tracking) and review and governance (through automated assignment and monitoring of ownership, challenge, and sign-off accountabilities).</p> <p>Scenario workflow automation may be enabled by either a scenario object embedded in a GRC system or by a customised platform developed to support automation-driven efficiencies</p>

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			The platform serves as a document and data collaboration platform but is not, or largely not, used to manage process task allocation and performance tracking to streamline accountabilities and facilitate traceability.	in the end-to-end execution process and document and data sharing. Where applicable, the platform is used as a collaborative hub using scenario process task alerts and monitoring to streamline responsibilities (including across the 1LOD and 2LOD as applicable) and facilitate traceability.
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>