



Scenario Analysis

A practical system for Airmic members

Guide 2016



The following content was prepared through a series of surveys, roundtables and interviews with Airmic members and specialist organisations.



Airmic would like to thank ORIC International, which has shared its framework for carrying out scenario analysis within financial services firms. If you would like more information on this framework, please contact Jenna Andrews (Jenna.Andrews@ORICinternational.com)

Founded in 2005, ORIC International is the leading operational risk consortium for the (re)insurance and asset management sector globally. ORIC International currently has 40 members with accelerating international growth. ORIC International is a not-for profit organisation dedicated to helping its members enhance the capabilities of their operational risk functions. ORIC International facilitated the anonymised and confidential exchange of operational risk intelligence between member firms; providing a diverse, high-quality pool of quantitative and qualitative information on relevant operational risk exposures.

As well as providing operational risk event data, ORIC International also provides industry benchmarks, undertakes leading research, sets trusted standards for operational risk and provides a forum for members to exchange ideas and best practice.

If you would like to contact ORIC International for information on membership please email enquiries@oricinternational.com

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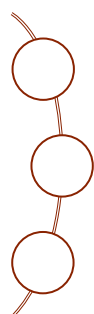
1 Introduction

Scenario analysis is frequently recommended by Airmic as a tool for risk managers to aid their business in understanding its risk exposures, and support strategic planning. The objective of this guide is to present a simple framework for risk and insurance managers to lead scenario analysis within their business, and demonstrate how this framework can be used for a variety of different purposes.

In the simplest of terms scenario analysis is the exercise of considering unexpected events, occurrences and change by asking the questions ‘what might happen?’ and ‘what could we do?’ Scenario analysis is an important part of an organisation’s risk management system, which involves understanding the extreme but plausible events that can affect the business and their effect on its strategy, operations and financial health. Scenario analysis tests the efficiency of the controls already in place and highlights unexpected risks and opportunities.

As part of our research into best practice Airmic have worked with ORIC International, which has recently developed its ‘Scenario Universe’ resource. Its research into the scenario analysis activities ORIC International members perform identified the six key stages in undertaking scenario analysis, which it has shared with Airmic. Airmic has supplemented this framework to meet the specific needs of Airmic members and will describe each of the stages in turn before describing how the framework can be used to meet the specific needs of the business.

Scenario analysis can be used to test the operational, tactical and strategic plans and activity within the business, and how they fit together. This guide will consider the following three uses of scenario analysis:

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- 1 Rehearsal of crisis management and business continuity plans**
 - 2 Testing of claims scenarios to ensure insurance coverage is adequate and would behave as expected**
 - 3 Horizon scanning and principal risk assessment to test sustainability of the business model**

2 Principles of scenario analysis

2.1 Principles of scenario analysis

Scenarios are not predictions, but alternative views of what plausible events may happen in the future. All organisations will have their own definitions of scenarios, which can range from simple single-factor events, e.g. a retailer asking itself what would happen if there were a major fire at a warehouse, to more complex multi-factor future events involving an extensive chain of events, e.g. an oil company asking itself how technology will improve energy efficiency and subsequently change the oil demand.

Single-factor scenarios are more useful for risk management where understanding impact and probability is key. The more complicated scenarios are used to develop strategy by considering the business environment in the future and enabling educated long-term decisions affecting research and development, marketing etc.

2.1.1 Scenarios are not risks

Scenario analysis forms part of the risk management system for the business, but scenarios are separate from risks. To avoid confusion, organisations should create separate but linked scenario and risk registers.

Risk		Scenario
• Included on the corporate risk register • Each risk should have an 'owner' • Assessed against specific and consistent criteria, where severity is based upon likelihood and consequence • Includes a mix of high severity and low severity risks		• Included on the scenario register • Each scenario should have an 'owner' • Free thinking consideration of the 'manifestation' of the risk • Tend to focus on high severity risks

2.1.2 Scenarios should be flexible

There can be a tendency for organisations to overcomplicate or be too granular in the details of the scenario. For most objectives, it is more effective to consider a class of event, e.g. rather than looking at 'the impact of avian flu in the UK', look at 'the impact of a pandemic' or 'the impact of the loss of 20% of our staff'. To avoid over complication, a series of complementary scenarios can be prepared, that are not in opposition to each other, but that offer alternative predictions and therefore alternative actions that can be taken by the business.

2.2 Scenario analysis – drivers and benefits

Airmic brought together a group of members and experts to understand why businesses carry out scenario analysis and identified three types of exercise, which will be covered in detail within this guide:

1. Rehearsal of crisis management and business continuity plans
2. Testing of claims scenarios to ensure insurance coverage is adequate and would behave as expected
3. Horizon scanning and principal risk assessment as part of annual planning

All exercises share common drivers and benefits, as outlined below;

Top-down drivers and benefits	Bottom-up drivers and benefits
• <i>Improved decision-making</i> • <i>Informing strategy, including identification of opportunities</i> • <i>Creating a risk-aware culture across the business</i> • <i>Meeting regulatory requirements in risk reporting, Board risk responsibilities and capital modelling for financial institutions</i>	• <i>Contingency planning</i> • <i>Assessment of risk control and risk transfer measures</i> • <i>Identification of key risk indicators</i> • <i>Created better relationships across the business, ensuring that the impacts or threats and weaknesses for one function are considered in view of the organization as whole.</i>



Specific objectives will arise out of the three types of scenario analysis that an organisation might carry out, which are summarised below;

Crisis management

- *To increase understanding and awareness of the impact of a crisis on the business, its brand and customers*
- *To stress test incident response and disaster recovery plans*
- *To ensure communications plan is suitable for media and customer communications, and limits adverse publicity*
- *To highlight the risk level of the scenario at a senior level within the organisation to ensure support for risk improvements*

Claims scenarios

- *To increase understanding of business risks to enable compliance with the Insurance Act duty of fair presentation*
- *To clarify policy coverage and intent of policy wordings*
- *To increase confidence in quantum for insurance purposes, e.g. for business interruption sum insured, indemnity periods and sublimits*
- *To identify key milestones and processes if the scenario were to manifest into a real major loss / claim*
- *To enhance the relationship with insurer and broker*

Strategic planning

- *To stress test the business plan against principal risks and a changing business environment on a long-term scale*
- *To assess the impact of scenarios on customers and therefore market position*
- *To highlight unexpected exposures*
- *To examine the upside of risk and risk scenarios*
- *To identify key risk indicators and 'early warning signals'*

3 The ORIC framework for scenario analysis

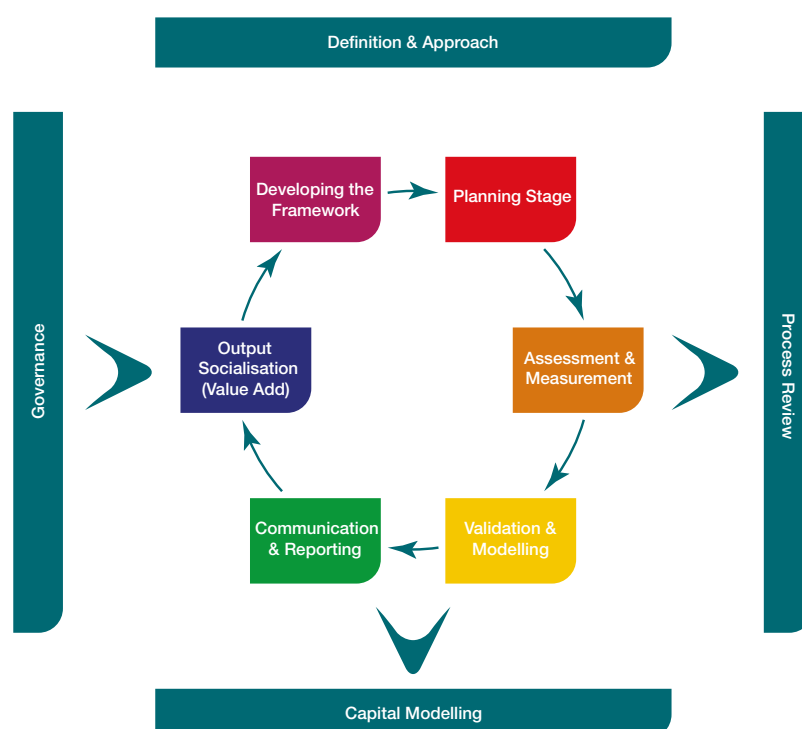
The exact method of scenario analysis is unique to every business. Therefore, judgemental input from individuals who understand the driving forces of the business and the objectives of the exercise is key. The individual steps taken and the participants involved will change depending on both the business and the specific objectives of the exercise.

In 2015, ORIC International interviewed its members on their approach to scenario analysis and identified six stages consistent across all the organisations, governed by four areas of oversight. Diagram 1 summarises the key stages of scenario analysis. However, as this framework is designed for the (re)insurance and global asset management industry Airmic will focus on the stages that are most relevant to its members, including those outside of the financial sector.

“Scenario analysis is widely used across a varied range of industries for a number of different purposes with multiple benefits. In the (re) insurance and asset management industries it is important for firms to validate, challenge and benchmark their own internal approaches with those adopted in peer firms. This was the fundamental basis on which we conducted our 2015 research into scenario analysis practices. The scenario Universe resource is a technical guide through the scenario analysis process end-to-end, based on current market best practice, with additional insights from industry experts.”

Jenna Andrews, Operational Risk Manager at ORIC International

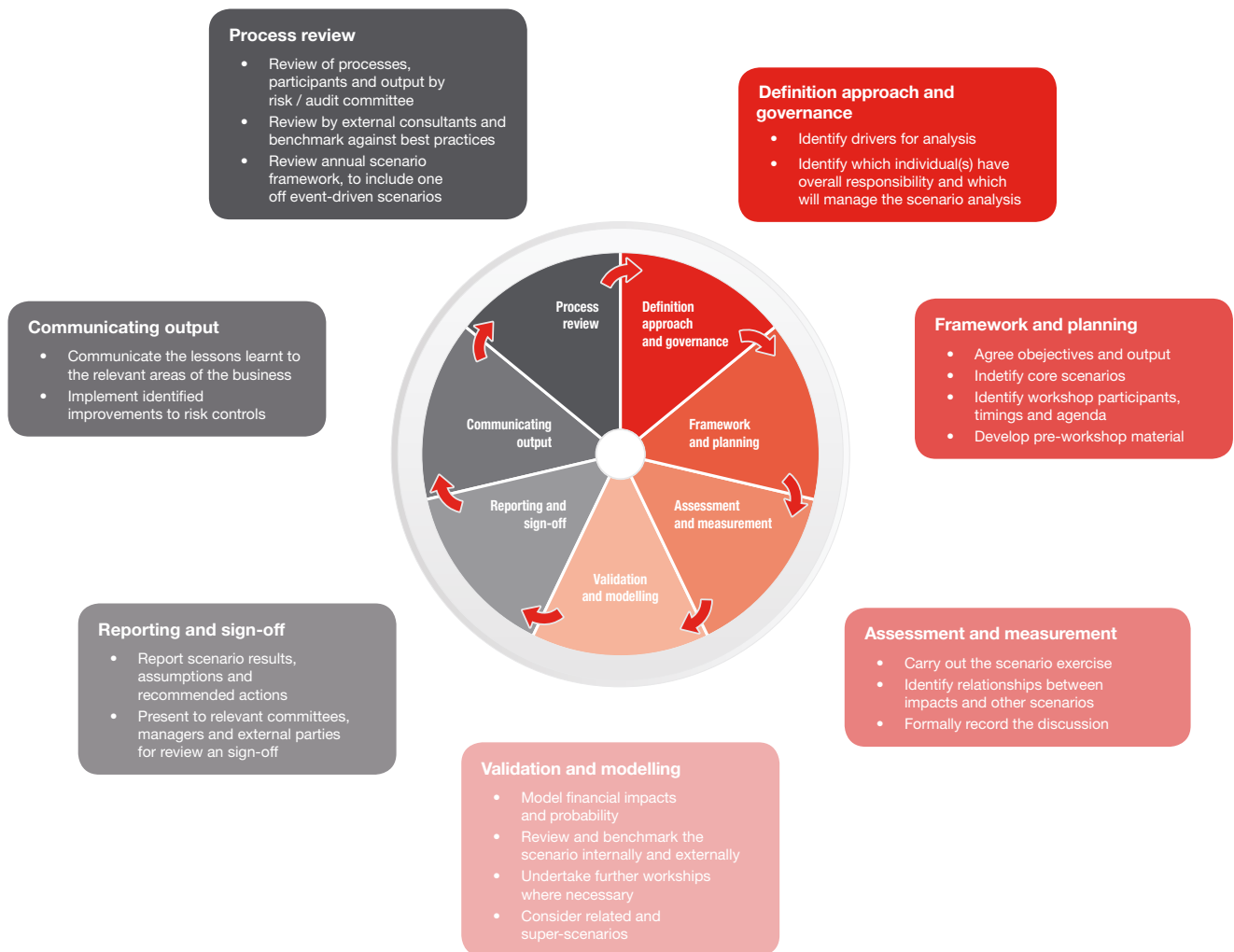
Diagram 1: The ORIC Scenario Analysis Framework
Taken from the ORIC International Scenario Universe
<https://www.oricinternational.com/>



3.1 The seven stages of scenario analysis for Airmic members

Airmic has adapted the ORIC framework to meet the specific needs of Airmic members. The seven key stages are summarised in Diagram 2 and are described in turn. The second half of this guide explains how each stage can be used in turn for the purposes of crisis management, claims scenarios and strategic planning.

Diagram 2: The seven stages of scenario analysis for Airmic members



3.1.1 Stage 1: Definition, approach and governance

Before undertaking scenario analysis, there must be a clear agreement of the governance for the process, and how this feeds into the overall risk management system for the business. The committees that have overall responsibility and the individual(s) who manage the exercise will depend on the overall objectives. However, the key to effective and relevant scenario analysis is having support and leadership from the Board and senior management, which can help ensure the participation of the rest of the business.

The Role of the Risk and Insurance Manager

Insurance and risk managers are involved, and often drive, crisis management and insurance stress testing exercises. However, Airmic members report that the Board or senior management tend to lead the strategic planning exercises, with insurance managers taking a review role at a later stage. As all exercises share the same framework, Airmic members, through demonstrating their credibility and expertise in managing the crisis management and claims scenarios, can gain a place at the strategic table. It is worth highlighting that Board focus for strategic scenarios can be on the balance sheet and P&L, and insurance managers may require some financial training in advance of any participation.

“After carrying out a cyber crisis management exercise, including participants from the Board and senior management, the importance of risk management and the value of the risk team were raised across the business. In particular, the exercise was commended for bringing together a variety of business areas, which can traditionally test their activities in isolation. As a consequence, we have more frequent dialogue with senior management and are consulted on a variety of more strategic issues.”

Amanda Craib, Head of Governance, EMEIA at Fujitsu

3.1.2 Stage 2: Framework and planning

The first stage involves understanding the driver for the analysis, and agreeing the objectives and required output, e.g. testing the limits of business interruption insurance. This will affect the governance and the specific procedures that will be used.

The organisation should establish how the scenario exercise will be carried out. A workshop involving a group of key participants is the preferred procedure for many businesses, but war games and live simulations or calls can be useful to gain the attention and deliver training for the Board and senior management.

Organisations must identify the workshop participants who fit the scenario, i.e. those that ensure the relevant functions are represented at the right level of seniority. Internal participants will be able to bring their business knowledge to the discussion, but these can be supplemented with external specialists or stakeholders, depending on the risk being investigated.

Choosing the scenario

The chosen scenario will depend on the objectives of the exercise, as more probable events may be investigated for crisis management whilst less probable events will be used to test the efficacy of an insurance policy.

Airmic members review the following when choosing the core scenarios to investigate:

- The risk register and emerging risks map
- Principal risk severity, impact and probability
- Regulator requests and compliance
- Requests from the Board, non-executive directors and any external stakeholders
- Market reports such as the World Economic Global Risks Report
- Major claims within the business sector

The team managing the exercise will then develop the workshop material and any information that should be shared with the participants in advance. For the majority of organisations, pre-workshop material typically consists of a short description of the scenario and then a number of questions or prompts that will shape the conversation.

3.1.3 Stage 3: Assessment and measurement

The purpose of the scenario discussion is to work through the scenario, asking the different functions to identify the probability and severity of any impact on their area of the business. The strength of the scenario will be in discovering problems in the relationships between different impacts across the business and linking these together into a meaningful framework.

Controlling the discussion can be a challenge, particularly where senior management is involved. The individual identified as the chair will be critical.

“The discussion requires someone who is in a position to facilitate the process and who is also unafraid to have assumptions of the business challenged. They must create space to ‘think the unthinkable’ and ‘speak the unspeakable.’”

Paul de Ruijter, Scenario Consultant

A separate individual should document the discussion in a logical and consistent manner. For all objectives, the following headings will be useful:

1. The rationale for the scenario chosen
2. The storyline(s) created. Particularly for strategy development, a number of complementary ‘storylines’ may have been developed
3. Any assumptions made
4. Assessment of impact (which should be quantified and modelled in more detail following the workshop)
5. Key risk indicators
6. Mitigation and controls already in place, and proposed improvements or changes
7. Any additional information that affected opinion and decisions
8. Any material shifts in opinion, response or output from previous scenario exercises, and the reasons behind this
9. Any additional scenarios that need to be considered as a result of the exercise.

3.1.4 Stage 4: Validation and modelling

Validation can begin with review by the risk manager. Firstly, the risk manager should review the documentation, checking for any bias or groupthink that may have crept in. The output should also be assessed by the original workshop participants as well as the alternative participants or external specialists to sense-check the plausibility of the scenario. Care must be taken as it is often identified that the more complex the scenario, the more likely a not very plausible outcome is accepted. Where possible, benchmarking the scenario against external loss data or industry-wide information is recommended.

Modelling of the scenarios is vital for risk managers to get the attention of the Board and senior management. In particular, estimates of the future possibilities relating to the scenario should be established. Financial impact modelling and banding of probability assessments into 'very likely', 'likely', etc. will assist the risk manager in gaining sign-off for their recommendations arising from the work.

Finally, identify the potential for 'super-scenarios' - where multiple scenarios can occur simultaneously, and consider the aggregation and correlation of different scenarios for the business. Where scenarios are considered unrealistic or super scenarios are identified, repeating and developing stages 1 and 2 may be necessary.

3.1.5 Stage 5: Reporting and sign-off

The output of the exercise should be presented to the relevant committees or management for sign-off. This may include the risk or audit committee, functional managers and the Board. Scenarios should be produced in a format that allows any external or internal recipients to formulate their strategy and determine immediate actions.

3.1.6 Stage 6: Communicating output

The lessons arising from the analysis must be integrated across the business. Organisations often use simulations, or training and awareness programmes, to ensure that relevant employees are able to identify when a risk event or crisis is developing and know how to monitor, report, react and control that event. Additionally, any identified improvements to risk controls and risk transfer mechanisms should be communicated.

3.1.7 Stage 7: Process review

Scenario analysis should be more than a one-off annual process. Members should consider undertaking annual exercises to consider major scenarios and then quarterly or ad hoc exercises looking at more minor scenarios or in response to internal and external events. To ensure improvement of the exercise, the risk and audit committees should review whether the specific processes, individuals involved and output are fit for purpose. Organisations can also make use of external consultants and review best practice through industry forums and associations.



4 Using scenario analysis for crisis management planning

Scenario analysis has its history in preparing for battle and therefore, unsurprisingly, the use of scenario analysis in crisis management planning is extremely well established. A crisis can be defined as something serious for the organisation that represents a threat to its operations, strategic objectives and reputation.

The Airmic research 'Roads to Resilience' defines resilient organisations as those that have the ability to rapidly respond to the unexpected by taking decisive actions at all levels to minimise the impact on the business. Scenario analysis is vital to understanding the possible impact and required actions that are needed to control the crisis.

4.1 Responding to board concerns

Crisis management exercises are typically driven by the Board, the Executive and the risk committee, who delegate the management of these to the business continuity and risk management teams. Committees are likely to respond to crises suffered by other organisations which also feature in their own corporate risk register. Occasionally, external stakeholders including investors and regulators may request information on how the organisation is equipped to deal with a risk in the public eye, e.g. a terrorist attack, stimulating the demand for scenario analysis.

4.2 Creating the core scenario

Senior management may provide the initial brief of the risk, but the risk and business continuity teams will need to develop the core scenario to be investigated. The scenario chosen should be realistic, and have multiple major impacts upon the business. This will likely require the input of specialists who can ensure the credibility of the scenario to be investigated.

“Our Board recognised that we are mature in our risk management of physical assets and therefore asked for the risk team to focus on the growing concern of cyber-attacks. The risk team sat down with our Information Security Management Colleagues to understand their exact risk concerns and how this may interrupt the business. This built up the detail of the core scenario to be presented to the wider business.”

Service Director, Delivery Assurance, Technology Firm

4.3 Selecting workshop participants

Risk managers should make use of the board leadership to gain accessibility to senior management across all areas of the business. Typical participants will include the Board and the heads of affected operations, finance, business continuity, group insurance, audit, security, communications / press office, health and safety, and any risk experts.

Eddie McLaughlin, Chief Commercial Officer (EMEA) at Aon Risk Solutions stresses the need to involve those on the ground as well as senior management “Organisations should try and go beyond senior management, where possible, to ensure that the practical day-to-day implications are captured. It is advisable to ask each function to be represented through a direct manager-subordinate relationship.”

4.4 Preparing pre-workshop material

The risk and crisis team should share as little information with the participants as possible in advance of the scenario workshops. A typical approach is sharing a brief document with participants summarising the following:

- Objectives of the exercise
- Ground rules for the exercise and timeline (important for simulation)
- Brief summary of the scenario (no more than one page)
- Links to other previous scenarios
- Shortlist of prompts or questions to ensure that key areas to be explored are considered. Prompts may be broken down into ‘phases’ to reflect how a scenario would develop in reality
- Contact details of facilitators and (if carrying out a simulation) role players.

For a traditional desktop workshop, material may be circulated a week before the event. For simulations and war games, material may be held back until one hour before the exercise.

4.5 The use of simulations

Crisis management exercises often take the form of partial simulations, where participants from senior levels are ‘thrown into’ the scenario with little prior information and asked to behave as if the situation were real. These sessions are used to review the suitability of existing crisis response and communications plans for the business, with a focus on the following:

- Which individual has ownership of the crisis and is responsible for its management?
- What are the roles and responsibilities of the participants? Do individuals fully understand their duties and are they equipped to perform them adequately in the event of a real crisis?
- What are the crisis management structures, and are these adequate and understood?
- Establish the key steps of the ‘react phase’, including establishing the issue, internal and external communications, legal review and initial mitigation steps.

A frequent challenge for risk managers is senior management claiming the scenario as ‘too unlikely’. It is important to reinforce that the simulation is meant to represent a ‘class of scenario’ and the focus should be on developing a framework of who to contact and what to do in the event of an unpredicted event.

Airmic members find external consultants useful in the creation and chairing of the scenario.

“We used external consultants to develop our cyber scenario, due to their business knowledge of the type and impact of cyber events. An external participant facilitated the workshop, challenging our internal teams on their approach, and then recommending actions after the scenario.” **Airmic member**

4.6 Validating the output against insurance

Despite being driven by group insurance / risk, it is useful to only consider coverage at a later stage. Some organisations choose to deliberately focus on issues where there is limited or no cover and therefore where loss will require financing from within the business.

“Each year the business performs an internal capital adequacy assessment process (ICAAP). It includes sections describing the key risks the business faces; how those key risks are mitigated through the governance of the business and its risk management framework; and the resulting capital assessment. Scenario workshops are held with subject matter experts from the business as part of this process.

After completion of the scenario workshops, an internal insurance expert validates the results in a risk mitigation framework.

Part of the internal validation includes mapping the scenario against the insurance policy coverage, policy limitations, exclusions and deductibles. The percentage of cover provided by each insurance policy is calculated and adjusted for timeliness.

This methodology ensures that the insurance cover is tested thoroughly for each of the scenarios.”

Airmic member, Financial Institution

4.7 Communicating output

Scenario output will be relevant to many areas of the business and should be escalated to the relevant functions and levels using:

- Review and update of disaster response manuals
- Creation of contact trees
- Live training and simulations
- Media training and update to communications guidelines
- Improvements to risk controls and mitigation procedures.

4.8 Example of using scenario analysis for crisis management - technology firm

Stage	Key Actions	Participants
Definition, Approach & Governance	- The Board of a technology firm identified cyber risk as a key exposure - Assigned the risk and business continuity team to investigate the impact of a number of cyber scenarios - Objectives to assess the impact on the business and its objectives and to review existing disaster and communication plans	Board Board committees Risk team
Framework & Planning	- Risk team worked with internal IT security and external cyber scenario consultants to develop a core scenario involving the hacking of a data centre - The scenario was broken down into four phases: initial detection of incident, establishing the crisis, communications and development of recovery plan - Engaged heads of relevant business areas to schedule partial simulation	Risk team Business continuity team Risk specialists (possibly external) Cross-functional heads of business
Assessment & Measurement	- Risk team facilitated a partial simulation of the scenario with 15 participants - Risk team provided brief 15-minute introduction summarising the scenario and the objectives. Head of business assurance chaired and recorded the discussion, and provided verbal feedback - The simulation used calls and discussion to progress through the scenario - Participants worked through the scenario as if live, consulting the crisis management and communication plans - The scenario covered the initial react phases of the scenario with focus on assigning a crisis management leader, ensuring that participants are aware and able to carry out their presumed responsibilities, establishing key external contacts and deciding immediate remedial and recovery actions and communications	Risk team Business continuity team External consultants Board Cross-functional heads of business, including: Communications IT Security Operations Audit
Validation & modelling	- Business continuity and risk teams reviewed the initial output - Interviewed actual and alternative participants to sense-check the output - Gradually moved focus from initial cyber-attack response to the impact on brand and customers - Once refined scenario reviewed by group insurance to confirm where cover is currently in place, or available	Risk team Business continuity team Legal and compliance teams
Reporting & sign-off	- All communication and follow up work prepared and incorporated into business report for heads of functions and Board - Report identifies the actions for individual roles in the business, and the type of decisions that they would need to take - Report highlights links between functions.	Risk team Business continuity team Risk committees Board
Communicating output	- Weaknesses in the disaster response and communication plan identified - Risk team led a lessons learnt follow-up with participants and improvements to any weaknesses were addressed - Training programmes for key risk indicator detection and reporting rolled out across the business	Risk team Business continuity team
Performance	- Review of the output and decision made to increase the number of scenarios to focus on smaller scale events rather than on just one major crisis - Aims to include more junior staff who may have more experience in how decisions and actions play out on the ground	Risk committee Audit committee Board

5 Using scenario analysis for claims scenarios

Most organisations are familiar with undertaking scenario analysis to understand claims scenarios and the response of their insurance policies. Running through claims scenarios allows the insured to establish the financial impact of a loss, gain clarity on the intent of their policy wordings and understand their priorities in the event of a loss, including the process of loss notification.

The new Insurance Act introduces the duty of fair presentation and raises the importance of scenario analysis in the insurance-buying process. The Insurance Act will require a complete understanding of the risk by the insured and insurer. Hence, the need for sitting down with brokers, underwriters, lawyers and others, and gaining a complete understanding of how the policy would respond to different circumstances.

5.1 Choosing a scenario

Group insurance will inevitably have responsibility and leadership for claims scenario workshops. Insurance managers report that it can be more difficult to engage the rest of the business in insurance scenario testing. To overcome this, the insurance manager can consider previous losses within their own organisation and industry and ask operational and key site staff how these would impact the business and what their exposures to such an incident would be. The scenario eventually used should be an extreme version of these concerns for example extending a one-in-10-year event highlighted by a manager to a one-in-200-year-event.

“We prefer to use ‘realistic disasters’ when testing the limits of our policy. We find that by basing the scenario on real events or addressing issues of concern raised by our business, we were able to much greater engagement from senior decision-makers within our organisation.” **Group Insurance Manager, Food and Drink**

5.2 The claims scenario workshop

It is advisable to share the core scenarios with the workshop participants in advance to allow review of the policies. Claims scenarios are chaired by the insurance manager or broker and can include the loss adjustor, underwriter, reinsurer (to provide a view on the original wordings) and the large claims representative from the insurer.

5.2.1 Validation and modelling of claims scenario output

Following the claims workshop, the insurance team and broker will aim to establish the probabilities and the impacts of the scenarios considered. This process will initially look at the qualitative plausibility of the scenarios by reviewing with group legal, specific risk experts and any other relevant parties.

Quantitative modelling of risk impact using internal data wherever possible will follow in order to consider the following:

- Probability of the scenario occurring
- The short, medium and long-term financial implications of dealing with loss, including consideration of the time required to receive settlement payment from insurers. This can be used to also determine the sum insured, gross profit, estimated maximum loss, etc.
- The velocity or speed of manifestation of the scenario if it were to occur

“The aim of the quantification and modelling exercise is establishing a narrow range of estimates, rather than exact and specific figures. It is better to be approximately right, rather than exactly wrong!”

**Eddie McLaughlin, Chief Commercial Officer (EMEA)
at Aon Risk Solutions**

5.3 Amending cover

Any limitations in cover identified as part of the workshop should be divided as follows

- **What can be changed at no cost?**
The broker can be tasked with making immediate simple changes e.g. wording changes to ensure agreed interpretation
- **What can be changed immediately, but at a cost?**
The broker can approach the market to discuss relatively simple policy improvements, e.g. adding a cyber extension to cover, or increasing limits or sublimits
- **What involves more work?**
Where major changes need to be made, e.g. creating bespoke cover for an identified political risk, the insurance manager may return to the business to investigate the risk further before discussing coverage requirements.

5.4 Example of using scenario analysis for claims scenarios - retailer

Stage	Key Actions	Participants
Definition, Approach & Governance	- Group insurance responded to continued business change from in-store to on-line sales, and took the decision to review the BI cover - Insurance manager and broker lead the exercise - Objectives to provide more confidence in the accuracy in declared values, the additional costs of working and the indemnity period for BI cover	Group insurance Risk team Broker
Framework & Planning	Insurance manager worked with operations to map out the activities of the business and highlight those activities critical to the delivery of products to customers	Group insurance Broker Cross-functional business experts
Assessment & Measurement	- Insurance manager and broker interviewed and facilitated workshops between individuals with oversight of each critical business activity, investigating what could disrupt this activity and the impact on the business, e.g. what would happen if the activity of a vital distribution centre was lost? - Liaised with business continuity to understand mitigation steps at each stage - Broker documented and facilitated discussions	Group insurance Broker Cross-functional business experts, e.g. Supply chain Procurement Logistics Online sales and IT Customer service Treasury
Validation & modelling	- Broker created mathematical matrix of the business impact of each scenario, highlighting where the disruption to one activity would impact others - Calculated the financial impact for disruption if completely unmitigated, and if all risk controls and mitigation performed as expected - Results of broker analysis sense-checked across the rest of the business - Numbers and assumptions made in analysis were sense-checked against the original participants to ensure that practical implications were factored in e.g. contract terms for mitigation actions and the subsequent impact on additional cost of working	Broker Insurance team
Reporting & sign-off	- Group insurance and broker reviewed the final model against existing cover, e.g. gross profit, limits and sub-limits, indemnity period - Any changes, clarifications or extensions required were discussed with insurers	Group insurance Broker Insurers Loss adjusters
Communicating output	Output shared with business continuity team to ensure the 'on the ground' response and non-insurance risk controls were reviewed.	Group insurance Group risk Business continuity
Process review	- Review of process and output by insurance manager and broker - This exercise will be supported by annual claims scenario tests that ensure the business is aware of how to report and manage complex losses for a variety of policies	Group insurance

6 Using scenario analysis for strategic planning

Perhaps unsurprisingly, strategic planning is the area of scenario analysis in which Airmic members are least involved, as this is traditionally led by the Board and senior management. Scenario based strategy was initially developed by Shell in the 1970s, when it asked itself ‘what will oil prices do in the long term?’ and considered how they would react to a rise in oil price of 400%. Although the scenarios were originally met with resistance, Shell was well prepared for the first oil crisis in 1973 and has used scenario based strategy ever since.

Strategic scenario planning involves examining the sustainability of the business model in relation to the business environment. Specifically, the impact of changes within the business environment on all inputs, activities and outputs within the business model should be examined, and how these impacts would subsequently affect one another should be considered. For example, how would a Brexit decision affect the human and physical resources and the business finances? By breaking down the business model into its component parts alternative strategies can be examined.

6.1 Choosing the scenario

The first steps should be understanding the mission of the business, and using external analysis (e.g. PESTLE) to understand how that mission could be disrupted. The risk manager can play an important role. An operational risk issue can be highlighted anywhere within the business e.g. within operations, human resources or facilities. The risk manager must consider how a minor internal operational risk may develop into a more strategic risk if ignored and how to escalate this to the Board – highlighting the need for scenario analysis.

“Emerging risks is key part of our Enterprise Risk Management Framework. The appearance of new or existing threats/ opportunities could have significant and service-wide consequences on our business, customers and/or service partners and are difficult to quantify. We are proactively managing the Company’s emerging risks via the normal risk cycle process, deep dives as well as using scenario analysis to identify, assess, manage, monitor and report to the Risk Committee and the Board.”

Maria Trouli, Risk Manager at Mobile Payments Company Ltd.

The scenario will require a long-term view of the business and its environment.

Paul de Ruijter, Scenario Consultant, recommends that the scenarios explored are linked to the business case: *“The scenario must cover the period for which any business model changes or developments are designed, implemented and would begin to make a return of the business.”*

6.2 Choosing the workshop participants and carrying out the scenario investigation

Strategic planning involves more commitment than crisis and claims scenarios. Scenarios developed must be relevant, plausible and insightful. This requirement can affect the participants and the type of engagement, as outlined in the table below:

Testing the scenario for;	Participants	Method of research
Relevance How is the business model and market position affected?	Board, CFO, CEO, COO	Interview and half-day workshops
Insightfulness Are assumptions of the business and environment challenged?	Customers and competitors	Market research surveys and interviews
Plausibility What is the probability that the scenario will actually manifest, and what would be the quantitative impact	External experts and specialists for the scenario	Follow-up workshops and interview / sense-checking

When chairing a workshop consisting of the Board and senior management, a challenge will be ensuring that all viewpoints are heard. The chair will need to set the ground rules for the exercise first, and be prepared to challenge ‘big voices’. Scenario experts often recommend using ‘voting software’.

“Combating groupthink and overpowering big voices can be difficult. We find that posing a question or theory to attendees, on which they vote anonymously allows free-thinking. The group then discuss and challenge the differing opinions and consequences.”

**Eddie McLaughlin, Chief Commercial Officer (EMEA)
at Aon Risk Solutions**

For each scenario, the business should be looking to establish the following;

- Scenario description
- General impact categories,
e.g. reputational, information security, regulatory, business resilience, local versus national versus global impact
- Root causes identified by class,
e.g. people versus governance with a brief description
- Controls,
internal and external oversight, internal guidelines and standards, risk transfer
- Direct impacts (assessed both with and without controls)
classed by type, e.g. increased costs, decreased revenue, fines
- Indirect impacts (assessed both with and without controls),
classed by type, e.g. loss of opportunities, reputational impact, breakdown of key relationships
- Details of example risk events and claims within own business, industry or wider
- Key risk indicators,
including details of monitoring, measuring and reporting going forward
- Linked scenarios.

6.3 Developing a framework of scenarios

Strategic interviews and workshops are likely to develop a large number of discrete ‘minor’ scenarios based upon single changes within the business environment. The organisation will need to identify relationships between scenarios and create a framework that is emblematic of a number of issues that can arise. Contextual factors affecting scenarios are not static and strategic scenarios inevitably change over time. Therefore, the framework should be reviewed roughly every six months by risk and business experts to determine any shift in quantitative impact.

6.4 Using strategic scenarios

Where weaknesses or exposures to change are identified within the business model, strategic scenario can help identify key risk indications that identify that a scenario is in the early stages of development. Organisations can use this to prepare training and awareness programmes across the business at all levels and build a more risk-aware culture. Strategic scenarios additionally can help identify the upside of risk and provide opportunities for the business to develop and grow.

“Our work with the Dutch Waterboard commenced by considering two areas of uncertainty that affects the Netherlands flood risk: climate change and socio-economic growth. We developed a number of long-term (up to 2100) scenarios which explored both areas of uncertainty at the most plausible extremes, e.g. if climate change were moderate or rapid, and highlighted implications for future developments of the Rhine estuary. The National Government was able to use these long-term scenarios to develop a flexible flood protection response to the two areas of uncertainty, but also identified opportunities to improve the internal short-term risk assessment, and hence improve short-term policy decisions.”

Paul de Ruijter, Scenario consultant

6.5 Example of using scenario analysis for strategic planning - energy firm

Stage	Key Actions	Participants
Definition, Approach & Governance	- Following a period of economic stress the organisation is now focusing on longer-term strategic planning - Strategy-based scenarios are established within the industry and the Executive team requested an ongoing relationship between the risk team and the strategic planning team, including the development of scenarios	Executive management Board Group risk
Framework & Planning	- The organisation has identified a number of 'uncertainties' most relevant to the organisation i.e. those that are the most variable but will likely have the largest influence on the business due to their impact on other factors affecting the business - Areas of uncertainty looked at included changing energy prices and other economic factors	Group risk Heads of functions
Assessment & Measurement	- Group planning managed a series of meetings to develop specific scenarios - Individual scenarios were developed over a number of meetings, to allow participants to return to the office and consider the impact of the scenario on their area of the business, and therefore to determine the most likely future for the scenario - Heads of relevant functions or their deputies attended meetings, ensuring technical expertise as well as wider business understanding - Group planning attended meetings and were given an equal role to ensure that all scenarios were considered in terms of business planning - Group risk acted as a 'challenger' in the meetings to ensure that all assumptions were challenged and considered in detail - The discussion created a series of plausible but different 'outcomes' for the business	Group planning Group risk CFO Heads of functions
Validation & modelling	- The output and implications for planning were reviewed at each meeting, to sense-check the scenario development - Modelling and the estimating of potential financial and economic consequences were carried out alongside the development of the scenarios - Scenarios were not assessed in terms of probability, but in terms of plausibility. A wide range of plausible events were considered, since 'predictions' of the future are likely to be wrong.	Group risk Group planning Heads of functions
Reporting & sign-off	The scenario is signed off and reviewed by heads of functions during the process	Group risk Group planning Head of functions
Communicating output	- For each issue and scenario, the implications for strategy were considered, alongside the development of the scenario itself. - Output was cascaded down to review how existing strategic plans might be altered.	Strategic planning Group risk
Process review	- The organisation has largely focused on two to three-year scenarios, but is increasingly looking at longer-term variables including technological, environmental and political risks - The organisation will continue to look at the scenario tested in terms of 'most probable outcome' but also examine the plausible extremes for the variable being investigated –i.e. a more optimistic or pessimistic view of the scenario.	Group risk Executive management

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