

Embedding ORSA: Explore it and discover practical improvement ideas

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ABSTRACT

The paper offers the following:

- Regulatory requirements for embedding the ORSA
- Background about ORSA developments before the commencement of the Insurance Act
- Why ORSA is essential
- ORSA requirements in a nutshell
- How ORSA can support with risk management of new risks
- ORSA process requirements and an outline of the sub-processes
- An ORSA process diagram showing sub-processes
- A perspective regarding what embedding the ORSA means
- Practical proposals for each sub-process to embed the ORSA better
- Key lessons and themes for embedding the ORSA

KEYWORDS

Embedding ORSA, ORSA process diagram, ORSA sub-processes, ORSA policy, Insurance Act 18 of 2017, GOI 3.1 Own Risk and Solvency Assessment, material risk assessments, stressed scenarios, business strategy, risk appetite, new risks, forward-looking solvency assessment, capital management, capital planning, management actions, protect policyholder interests

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1. INTRODUCTION

The Insurance Act 18 of 2017 (“Act” in this paper) became effective on 1 July 2018 in South Africa (SA). It became the new legal framework for the prudential regulation and supervision of life insurance or non-life insurance business conducted in SA, including reinsurance. The Act mentions that the Prudential Authority (PA) may prescribe governance principles and requirements relating to risk management, including requirements regarding own risk and solvency assessments.

Prudential Standard GOI 3.1 Own Risk and Solvency Assessment (ORSA) for Insurers (“GOI 3.1” in this paper) requires insurers to conduct their ORSA at least annually. An insurer should perform an out-of-cycle ORSA when the insurer’s risk profile changes materially or when directed to do so by the PA. GOI 3.1 applies to all insurers licensed under the Act, other than microinsurers, Lloyd’s, and branches of foreign reinsurers. The application of GOI 3.1 to insurance groups is addressed in a separate standard, GOG 1 (Governance and Operational Standard for Groups), which is not explored in this paper.

GOI 3.1 mentions that the purpose of an ORSA is to confirm that the insurer is adequately capitalised and has access to additional sources of capital, if needed, to deal with a wide range of future scenarios. Some critical requirements of GOI 3.1 are that:

- “An ORSA must assess the current and likely future financial soundness of the insurer across a range of scenarios.”
- “An ORSA must address all reasonably foreseeable and relevant material risks.”
- “An ORSA must be subject to robust verification by appropriately qualified, independent persons.”

In respect of embedding the ORSA, GOI 3.1 mentions the following:

- “An insurer must, at all times, be able to demonstrate to the PA that each ORSA is aligned with the risk profile of the insurer, is widely used, is embedded in the decision-making processes of the insurer, plays an important role in its system of governance, and informs strategic decisions, especially concerning capital planning and management (Section 4.3).”
- “The ORSA policy must ensure that the results of the ORSA are properly embedded in the capital management process (Section 5.4).”
- “The ORSA process is a powerful tool, but it is of little value unless its outputs are embedded into strategic decision-making by the insurer. The PA will look for evidence that the ORSA is embedded and that management actions are linked to the outputs of the exercise (Section 7.3).”

It is noted above that embedding the ORSA is a critical regulatory requirement for insurers. However, an implementation framework for embedding the ORSA is unavailable locally or globally. The background section below explores industry preparation for how to embed the ORSA in the years before the implementation of the Act.

2. BACKGROUND

In the years before the commencement of the Act, there were several activities in the insurance industry to prepare insurers for the ORSA. Regarding embedding the ORSA, key activities and requirements are outlined below.

Insurers were requested to complete the Solvency Assessment and Management (SAM) Pillar II readiness surveys in 2012 and 2014. They covered governance and risk management, including the regulatory requirement for insurers to undertake an ORSA.

During 2012, insurers were asked various questions about their Pillar II practices based on available guidance. A meaningful outcome of the self-assessment was that 94% of insurers rated their ORSA as weak or needing improvement.

The final Position Paper 34 (v 7) Own Risk and Solvency Assessment of 4 October 2012 (“Position Paper 34” in this paper) was approved by the SAM Steering Committee. In respect of embedding the ORSA, below are some critical points from Position Paper 34:

- “Stress testing must be documented, available for review, and be embedded in enterprise-wide risk management.”
- “ORSA should be embedded in the business and reflect an undertaking’s business plans.”
- “ORSA should be used to ensure that own funds are sufficient for the insurer to achieve its business strategy.”
- “By not setting formal ORSA templates, an insurer may embed the ORSA in its business and decision-making processes and derive value from it rather than viewing it as a compliance exercise.”
- “The Board of Directors (BoD) and Senior Management are responsible for ensuring that the ORSA is embedded in the business and decision-making processes.”
- “Entities should explain how the ORSA is embedded within strategic, operational, and risk management processes.”

As per Position Paper 34, an entity should be able to explain and justify the following:

- “The methodology and key assumptions used in assessing each risk type.”
- “The result of the assessment, including the sensitivity of the result to key assumptions.”
- “Appropriateness of the modelling approach, including how it captures all risk types.”
- “Sources of data used in the ORSA and the controls around the integrity of the data.”

In 2014, a follow-up exercise was performed. As per the SAM Report on the Pillar II Readiness Survey (May 2015), 77% of insurers self-assessed their ORSA as weak or needing improvement. The industry self-assessment was unsettling for the following reasons:

- A self-assessment was possibly optimistic compared with an independent assessment, so the gap between existing and necessary practices was perhaps wider.
- The development needed exceeded the skills supply, especially in risk functions with low headcounts.
- Risk functions focused on having risk management mindsets, but what if corporate cultures did not embrace it?
- Management had core growth priorities and possibly did not sufficiently engage with developing and embedding ORSA.
- In the absence of a proper ORSA, it was challenging for the BoD to understand whether policyholder obligations were appropriately protected.

The final Position Paper 107 (v 6) Own Risk and Solvency Assessment – Further Guidance of 23 June 2014 (“Position Paper 107” in this paper) was approved by the SAM Steering Committee. In respect of embedding ORSA, the following is mentioned in the document:

- “The timing of the ORSA should be appropriate to demonstrate that it is embedded in the business and is used in strategic decisions (Section 1.10).”
- “The primary purpose of the ORSA is to ensure that the insurer assesses all the risks inherent in its business and determines its corresponding capital needs. To achieve this, an insurer must have adequate, robust processes for assessing, monitoring and measuring its risks and overall solvency needs while ensuring that the output from the assessment is embedded into the decision-making processes of the insurer. This ORSA entails many processes and procedures embedded in the day-to-day management of risk and the business, and the intention of the guidance is not to be overly prescriptive as to how exactly these processes are designed or executed. The reference to ‘conducting’ the ORSA process implies collating the risk-related information from business-as-usual operations, updating the financial projections, and producing risk and capital-related management information (Section 1.15).”

In 2015, insurers were required to submit Mock ORSA reports to the Financial Services Board (FSB). As per the FSB’s SAM Newsletter 17 (15 December 2015), the following high-level feedback on the Mock ORSA exercise was provided:

- “Most Mock ORSAs were generally acceptable concerning the document flow and discussion of the risk management framework and the projections and stresses performed.”
- “In general, evidence for statements and reasons was not given or not sufficiently explained.”
- “Some Mock ORSAs had a template-like feel, and it was expected that the BoD of

insurers would take more ownership and tailor the report to reflect insurer-specific factors and circumstances.”

- “Unquantifiable risks were not well explained, nor was there an adequate explanation of how such risks would be managed (actions such as holding an arbitrary amount of capital or putting mitigation strategies in place are insufficient).”
- “Some identified risks were not addressed, and often there was little focus on noninsurance and non-SA subsidiaries.”
- “There was too much focus on regulatory capital requirements and not enough focus on an own view of risks and solvency.”
- “In general, the FSB expected more from the larger insurers.”

The feedback indicated that much development work was still required in the industry to improve the embedding of the ORSAs. The newsletter mentioned that individual feedback on Mock ORSA submissions would be provided to insurers in early 2016. During 2016, it was required that updated Mock ORSA reports be submitted to the FSB. There were no further updates in the public domain regarding industry’s readiness to embed their ORSAs.

3. PROBLEM STATEMENT

Embedding the ORSA is a necessity for insurers. Still, there needs to be a set of complete principles, a well-known industry approach, or an industry implementation framework available to inform how to embed the ORSA better.

The author explores what embedding ORSA means and offers practical improvement proposals for insurers to embed their ORSAs better.

4. WHY ORSA IS IMPORTANT

The embedding of the ORSA is particularly relevant because insurers are generally affected by tumultuous times. Material risks, e.g., COVID-19 and social unrest, are often unforeseeable. However, insurers with embedded ORSAs can react with informed responses.

The Solvency Capital Requirement (SCR) formula is consistent across the industry, and insurers submit their solvency positions to the regulator in the Quantitative Reporting Template (QRT) quarterly. ORSA focuses on an insurer’s risk and solvency assessment, and insurers submit their ORSA reports to the regulator at least annually.

Each insurer is unique, with a specific risk profile. It is reasonable to expect some differences between an insurer’s ORSA figures compared to its SCR because:

- The SCR is based on average industry experience for underwriting, market, and operational risks. These are not explicitly designed for the insurer’s characteristics (e.g., distribution channels, legal structure, legacy systems, etc.).
- The SCR is applicable across the industry and addresses the material risks of a typical insurer. It does not cater to the insurer’s unique risks and business strategy.
- The SCR is not designed to be forward-looking over the business planning period.

- The SCR does not allow for qualitative management feedback about the insurer's specific risks from products and commitments to policyholders.
- The SCR is calibrated for a one-in-200-year situation (99.5% confidence level), whereas ORSA may also want to explore lower confidence levels that management considers more conceivable; e.g., ORSA considers the effect of plausible stressed events during the three-year business planning cycle to inform management actions.
- The SCR quantification approach remains stable, whereas the ORSA evolves and allows for new risks. SCR is not designed to quantify new risk types. When SCR is used to assess new risks, e.g., electricity load-shedding or climate change, the application may be inconsistent across the industry.

The ORSA assesses foreseeable and material risks. It clarifies where risk exposures exceed appetite levels and where risk reductions are needed. The ORSA offers the insurer's risk profile before and after the effect of implementable management actions.

(Re)insurance markets are connected globally, so existing risks evolve, and new risks arise. The insurer operates in these markets, and market movements affect its risk profile. Risks should not be ignored or assumed to be reduced adequately through diversification. The insurer relies heavily on the ORSA to evaluate the materiality of risks, and the robustness of risk management practices.

The ORSA can allow for lessons learned from past experiences. Some past risks are no longer present, while some legacy risks may still be relevant and material. The ORSA provides a holistic view and awareness of the insurer's current and forward-looking risk profiles.

5. ORSA IN A NUTSHELL

This section summarises the minimum requirements for the ORSA.

An ORSA's objective is to assess the resilience of an insurer's solvency across a range of possible scenarios, allowing for the specific risk profile of the insurer, approved risk appetite, and business strategy.

The ORSA is a regulatory risk management requirement for insurers. The timeframe of the forward-looking and risk-based ORSA is consistent with the insurer's business planning horizon, typically three to five years. GOI 3.1 mentions that a "minimum three-year projection period is required".

The ORSA should be widely used and embedded in decision-making processes, especially concerning capital planning and management. Its minimum requirements are:

5.1 Future solvency assessments

- "The insurer's current and likely future financial soundness position on an economic and regulatory basis."
- "Differences between the risk profile of the insurer and the implied risk profile underlying the SCR should be explained."

5.2 Material risk assessments

- “Processes to identify, measure, monitor, manage, and report the short- and long-term foreseeable and relevant material risks, including underwriting, credit, market, operational, and liquidity. Risks arising from the insurer’s operations and risks of being part of an insurance group should be assessed.”

5.3 Own funds projections

- “The quantity and quality of own eligible funds needed over the business planning period to maintain the financial soundness of the insurer, confirming that the insurer can meet policyholder obligations and achieve its business strategy.”

5.4 Stressed scenarios actions

- “The impact of stressed scenarios on the quantity and quality of own eligible funds.”
- “Management actions should be linked to the ORSA outputs.”

ORSA is relevant in many jurisdictions worldwide, including Africa, Europe, America, and Asia, but ORSA disclosure information in the public domain is limited.

6. ORSA FOR NEW RISKS

Some underwriting, market, and operational risks are considered business as usual for an insurer. Operations focus on understanding and managing these existing risks. When new risks arise, there may be no process or blueprint available to manage them, so management should think creatively. A risk may have existed for some time, but collective awareness about it is new. There are also instances where collective risk awareness existed, but the risk was not considered relevant and material for the insurer at the time.

New risks affecting typical insurers include social unrest, climate change, and cybercrime. Another risk is the increased cost of living (inflation risk) that makes it difficult for typical insurers to meet increased growth targets because disposable incomes are lower, possibly resulting in lower new business sales and increased policy cancellations.

Insurance executives are focused on achieving business growth targets and may consider risk management as business as usual. In some instances, undesired new risks may arise years later, and the insurer may have little time to prepare to manage them better.

Regular forward-looking risk assessments may increase risk awareness and identify new risks. The goal is to minimise or avoid unwanted new risks. Examples of areas where such assessments can add tremendous value include new product launches, deep dives into distribution channels, system migrations, investment strategy reviews, and risk reviews of inorganic growth opportunities.

An Evaluate-Respond-Monitor approach may be adopted for new risks.

6.1 Evaluate the risk

- Perform intensive research to collate publicly available information on new risks. Consider using ChatGPT as a starting point, although it does not offer transparency regarding the sources used.
- ORSA modelling can support understanding the relevance, materiality, and potential sensitivity impact of the risk for the insurer. For example, a risk may be topical in society but not material for the insurer.
- Data availability to quantitatively and accurately assess a new risk may be limited, so a qualitative or crude quantitative assessment is adopted. A new risk may also arise in the operational processes of the insurer, and internal data may be available to assess this.

6.2 Respond to the risk

- During the Risk Appetite setting process (an ORSA sub-process outlined later), set tolerable impact levels for the planned experience. For example, define preferred ranges for new business growth, claims experience, expenses, retention of the existing book, and fund investment growth. These preferred ranges can be translated into a risk appetite statement that provides the appetite and limits for underwriting, market, and other key risks.
- In respect of risks that are not within appetite, consider management responses that are specific, measurable, practical, and time-sensitive. Examples include changes in reinsurance arrangements, product benefit reviews, changes in the investment strategy, and not filling non-critical vacant job roles. The response to the risk is effective when it directly impacts the specific risk.

6.3 Monitor the risks and the insurer's operational experience

- Identify indicators to understand better how the new risks evolve. Regarding new risks where the insurer is not considered a subject matter specialist, e.g., climate risk, the insurer should monitor relevant research, trends and analysis from reputable sources.
- Introduce data process requirements that may enable future assessments of the estimated severities and likelihood of new risks. It is envisaged that the insurer should collect at least the minimum data required for underwriting and claims processes to allow for future risk assessments.
- Set a risk appetite for new risks, and monitor the exposures to tolerable impact levels.

7. ORSA PROCESS THEORY

Understanding what the ORSA process should include is vital. GOI 3.1 mentions:

- “ORSA comprises the totality of the processes and procedures employed to identify, measure, monitor, manage, and report the insurer's short- and long-term risks and potential risks (Section 6.3).”

- “ORSA comprises the totality of the processes and procedures employed to determine the own eligible funds needed to maintain the financial soundness of the insurer over the planning time horizon and across a range of adverse scenarios to achieve its business strategy (Section 6.3).”
- “ORSA assists an insurer in determining when to transfer or retain particular risks and how to price risk (Section 7.1).”
- “The central role of the ORSA process is in capital management and planning. By assessing the gap between required and available capital across a range of risk scenarios, the ORSA helps management identify the capital raisings and contingencies that may be needed to execute the insurer’s business strategy. By identifying these needs well in advance, the ORSA helps the insurer to optimise its capital base over time (Section 7.2).”
- “An insurer must ensure that an assessment and validation of the process whereby the ORSA has been performed is carried out by an independent and appropriately qualified person who is operationally independent of the ORSA process (Section 8.1).”

The ORSA process is referred to as the totality of processes, but in practice, it is helpful to identify the key sub-processes and visualise the flow between them. The following section offers an ORSA process diagram.

8. ORSA PROCESS DIAGRAM

Figure 1 is a diagram of an ORSA process, showing the key sub-processes. An ORSA process commences with the information collection sub-process and concludes with completing an ORSA record. The arrows in the diagram are a reminder that the ORSA process is iterative. After completing a sub-process, the ORSA process sometimes returns to an earlier sub-process because the ORSA outputs are used to revise and refine it.

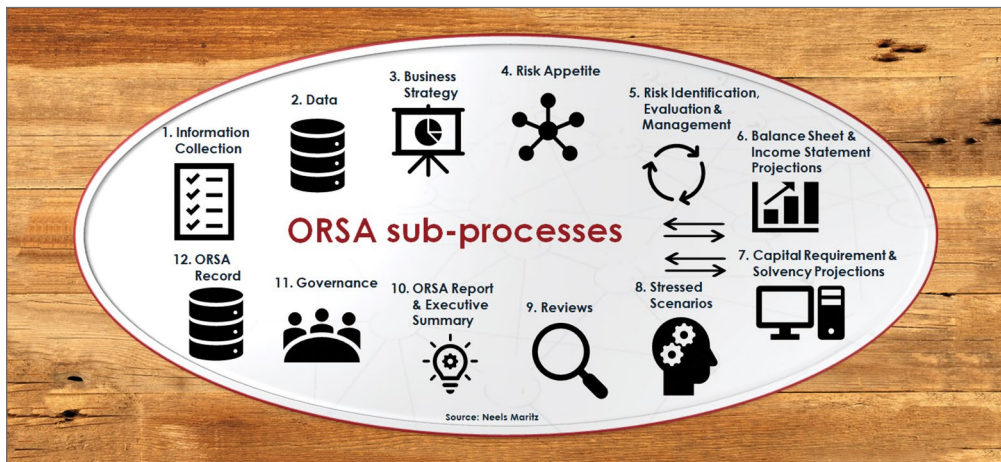


FIGURE 1 ORSA process diagram

The following section outlines the key sub-processes.

9. SUB-PROCESSES OF ORSA

The typical scope of each ORSA sub-process is outlined below.

9.1 Information collection

The information collection process includes obtaining the insurer's Enterprise Risk Management (ERM) system documentation. This includes various risk management policies, e.g., the ORSA and capital management policies.

The Risk team is usually responsible for ORSA reporting and may request management to populate a template. While collecting information, there is a risk that the inputs received are not of appropriate quality (e.g., not the final approved version).

Management information on business performance and risk indicators compared to targets are also collected. The ORSA report should contain credible information (e.g., governed by actuarial and audit committees).

9.2 Data

The data process includes obtaining finance and operational data required to perform an ORSA. Reconciliation checks are performed when data are obtained from multiple sources and consolidated. For example, it should be confirmed that the difference between the consolidated version and individual sources is less than some acceptable difference (e.g., 0.25%).

Data accuracy and completeness checks are performed. Data may need to be corrected to pass data checks. With assumptions to fill the gaps or improve the data quality, the data can be used for modelling. When data are inconsistent from one period to the next, it is analysed and understood why this may be the case (e.g., a new system was implemented since the previous ORSA).

The ORSA report should provide clear information about the sensitivity of results to the data adjustments and assumptions made.

9.3 Business strategy

The documented and confidential business strategy is collected. The business strategy is shared with only those parties that need to know it. The business strategy provides the planned initiatives over the business planning period. It may be high-level and qualitative in nature. However, it typically contains some high-level quantitative targets.

An insurer's core strategy may remain similar from year to year. The high-level financial targets reflect any changes in the business strategy. The dependencies should be explicit, and the business strategy should be based on something other than assumptions that are too good to be true for the insurer.

9.4 Risk appetite

During the risk appetite setting process, the material risks of an insurer are quantified using statistical modelling approaches and other qualitative assessments. For example, underwriting and market risks have Value at risk (VaR) assessments at a 99.5% confidence level. The sensitivity of risk assessments to the underlying input (e.g., policy and claims data) should be illustrated to management.

The risk appetite setting process is iterative initially because the business strategy information is typically high level. The risk appetite is sometimes revised and calculated more accurately using the more granular data available later.

GOI 3.1 mentions that the BoD should approve the risk appetite and related risk limits. The business strategy results in a specific risk profile, and by supporting the risk appetite, the BoD essentially approves the business strategy.

The documented risk appetite statement includes quantitative targets over the planning period and qualitative statements for specific risks. Examples of quantitative targets include red-amber-green (RAG) ranges for SCR or economic capital (EC) coverage ratios.

The SCR is the primary requirement in the Financial Soundness Standards for Insurers. In other words, it is the capital requirement based on the regulatory standard formula. In comparison, the EC is the capital requirement based on the insurer's risk assessment that allows for its particular risk profile.

An illustrative RAG example of a capital requirement coverage ratio:

- **Green:** The capital coverage ratio (e.g., the multiple of eligible funds covering SCR or EC) is equal to or above 1.40
- **Amber:** The ratio is between 1.20 and 1.40
- **Red:** The ratio is equal to or below 1.20.

An example of a qualitative statement is that there is no appetite for insuring commercial properties that do not comply with the necessary regulations to minimise fire and climate change risks because it is considered too risky for the insurer (and its reinsurers).

9.5 Risk identification, evaluation, and management

The insurer's ERM system includes the processes, procedures, and tools used to identify, assess, manage, monitor, and report the insurer's material financial and non-financial risks. Risk levels may be quantified by considering their estimated likelihood and frequency. Risks are managed to remain within risk limits, and risk mitigations are implemented as required for risks to stay within limits.

The ORSA process is a component of the insurer's ERM system and performs a forward-looking evaluation of these risks, including new risks. ORSA considers the effect of planned responses and management actions.

9.6 Balance sheet and income statement projections

The forward-looking income statement and balance sheets over a minimum of three years are usually produced by the Finance team. The projections reflect the planned financial figures of the business strategy over the planning period. The drivers of material movements should be well understood during the iterative process of performing projections, e.g., forecasts are revised based on ORSA outputs.

Generating projections for the balance sheets and income statements is important because the output is crucial to the capital requirement calculation process. Assumptions are required to translate the business strategy into capital figures, and preferably these assumptions should be subject to review.

FSI 2.3 Determination of Eligible Own Funds specifies the criteria for own funds for solvency coverage. For example, when calculating own funds, retained earnings, including profit for the year, should allow for foreseeable dividends, i.e., assumptions are required regarding the dividend payout levels (if applicable).

The financial statement projections should be accurate. The change from the current financial position to the projected position should be supported by the business strategy and be considered sensible given the trend in recent experience. The projections should allow for relevant internal (e.g., ERM system) and external environment (e.g., legislation) requirements and constraints.

During the projection process, essential finance and risk-adjusted metrics are considered. An example of a finance ratio is the Jaws ratio which measures the extent to which the insurer's income growth rate exceeds its expenses growth rate. A negative Jaws percentage is a cause for concern as profits will decrease because of increased expenses. Risk-adjusted metrics are often available once the capital requirement projections are performed (i.e., the following sub-process), and projected risk-adjusted returns on capital may be derived.

The projections are refined when further details about implementing the business strategy become available. The version of the financial statement projections used in the ORSA should align with the business strategy, which is subject to BoD approval.

9.7 Capital requirement and solvency projections

The actuarial team usually performs the capital requirement and solvency projections. The finance team provides the income statement and balance sheet projections as input. Input may also be required from diverse stakeholders, including fund managers, to provide descriptive investment fund data and product underwriters to provide benefit limits.

When the capital requirements are calculated for each of the next three years, it often involves three separate sets of detailed calculations. However, some insurers choose to roll forward the first year's SCR using risk drivers and applying the correlation matrices.

A change in the input, e.g., the financial statement projections, means that the capital requirement and solvency projections should be recalculated for accuracy. Insurers should automate processes where possible to achieve this in practice within the timelines available.

GOI 3.1 mentions that an ORSA must assess the insurer's current and likely future financial soundness position on an economic and regulatory basis. Risks included in the EC should be consistent with risks managed in the business. They should allow for risks not considered adequately covered by the SCR calculation, e.g., reputation and strategic risks (Position Paper 34).

Regarding capital requirement and solvency assessments, essential prudential standards are mentioned below. Prudential Standard FSI 4 Calculation of the SCR Using the Standardised Formula provides the basis on which the SCR is calculated for insurers using the standardised formula.

The SCR is held against the key risks to which an insurer is exposed and is designed to capture risks covering existing and new business expected to be written over the following year. It is calibrated to correspond to the VaR of an insurer's basic own funds at a confidence level of 99.5% over one year.

The alternative approach of using a regulatory-approved internal model is set out in FSI 5 Calculation of the SCR Using a Full or Partial Internal Model. An EC model is not required to be approved by the regulator. Like a regulatory-approved internal model, an EC model includes risks not covered by the SCR but, at a minimum, contains the risk categories and core components covered by the SCR.

Where an insurer does not employ an EC model to assess its risks, it must justify to the regulator why it considers the SCR to accurately reflect its risk profile, risk appetite (and related risk limits) approved by the BoD, and business strategy.

The valuation of assets and liabilities to assess regulatory financial soundness differs from those used for general financial reporting purposes (e.g., IFRS 17). Relevant prudential standards to assess regulatory financial resilience include FSI 2.1 Valuation of Assets and Liabilities Other than Technical Provisions, FSI 2.2 Valuation of Technical Provisions, and FSI 2.3 Determination of Eligible Own Funds. FSI 2.3 specifies the detailed criteria for classifying own funds into tiers (tiers 1, 2, or 3).

9.8 Stressed scenarios

Stressed scenarios are performed to assess the changes to the solvency position that might occur in stressed situations. The assessment considers the quality of the capital resources and future capital management needs. For example, it indicates if capital injections may be required to improve capital adequacy or liquidity after a stressed scenario.

A typical approach for engaging senior management and the BoD in the ORSA process is to request review feedback on the stressed scenario narratives and the calibration inputs of key risk drivers. The BoD may consider the impacts of stressed scenarios in approving risk appetite (and related risk limits).

Position Paper 96 (v 4) General Stress Testing Guidance for Insurance Companies ("Position Paper 96" in this paper) mentions that stress tests should cover a range of risks, business areas, and the insurer. Where relevant and material, such risks may include:

- “Credit risk (i.e., counterparty and reinsurance risk)
- Market risk
- Macroeconomic risk (e.g., sovereign rating, unemployment)
- Insurance risk (e.g., mortality, morbidity, claim frequency and severity, lapse risk, natural catastrophes, and human-made catastrophes)
- Liquidity risk
- Operational and legal risk (including outsourcing risk)
- Concentration risk
- Contagion risk
- Risk to reputation
- Securitisation risk
- New business risk
- Regulatory risk
- Inflation risk.”

In practice, typical examples of stressed scenarios include:

- Increased electricity load-shedding
- Rand depreciation, increasing the cost of imports
- Business growth materially deviating from planned levels
- A pandemic (similar to COVID-19)
- Concentrations of claims in certain geographical regions
- Changes in legislation that may materially affect the profitability of specific products
- Changes in liquidity of own funds compared to planned levels
- Operational losses higher than budgeted levels
- Combinations of sensitivity testing (i.e., increasing stress levels) for material risks (e.g., underwriting and market risks).

GOI 3.1 does not prescribe the stressed scenarios to be used. Position Paper 34 mentions it is recommended that the details of the scenarios, e.g., the size of stress levels, not be prescribed by the regulator because each insurer should set this based on its risk profile and business strategy. It mentions that prescribed stresses from the regulator, e.g., to assess systemic risk across insurers, are considered additional.

Position Paper 34 mentions that stressed scenarios should reflect plausible but severe events that may happen over the business planning projection period. The stresses are applied instantaneously and over a multi-year projection period. The key ORSA outcomes are the capital coverage ratios for each projection year compared to risk appetite and the management actions in response to the ratio decreases.

Position Paper 107 mentions that an insurer’s stressed scenario modelling approach may range from simple stress tests to sophisticated EC models. As previously mentioned, ORSA models are not required to meet the requirements of regulatory-approved internal

models. When assessing risks, the quantification methods should be appropriate to the risks' nature, scale, and complexity (the principle of proportionality).

Position Paper 107 mentions that the assessment of overall solvency should consider management actions that may be adopted in adverse scenarios. Their financial effects and any preconditions that may affect the implementation of management actions as risk mitigators need to be precise. The assessment should address how management actions would be enacted during financial stress. Assumptions regarding management actions should be validated. For example, during times of stress, it should be considered that parental support may not be forthcoming, and the ORSA should reflect this.

Position Paper 34 mentions that stress testing should include scenarios that could result in business failure (such as a breach of economic or regulatory solvency, a breach of minimum capital requirements, or other circumstances considered appropriate by management and the BoD). According to Position Paper 96, reverse stress tests determine the scenarios that challenge the viability of the insurer.

Reverse stress testing is used as a risk management tool to help understand relationships between risks. It is not used to inform capital injection needs. Position Paper 96 mentions that a reverse stress test starts with a specified outcome that challenges the viability of the insurer. Thereafter the analysis works backwards to identify a scenario or combination of scenarios that could bring about such an outcome. For example, an insurer may incur a substantial loss that challenges its viability, and the analysis would identify the potential scenarios that could bring that about.

9.9 Reviews

GOI 3.1 specifies that the insurer's ORSA process should be assessed and validated by an independent and appropriately qualified person, operating independently of the ORSA process. The independent person should assure the BoD that the ORSA policy has been complied with. The ORSA policy contains the areas of the ORSA subject to independent review and the frequency of reviews. The independent person may be internal (e.g., Internal Audit) or external.

GOI 3.1 does not specify specific processes and refers to ORSA as the totality of processes, so careful planning is required to achieve an adequate independent review of the ORSA process. Position Paper 107 mentions that although the EC model is not expected to meet regulatory approval, the insurer should ensure that the model and inputs are subject to independent review.

In practice, Risk Appetite is sometimes specified at a high level without directly linking to the day-to-day business decisions. For example, the target capital coverage levels may be known, but management may need to better understand the operational drivers of risk exposures.

An independent reviewer may check to confirm that the direct relationship between the operational data, risk limits, and risk level quantifications is clear to management.

Management should understand which decisions can affect the risk exposure and the sensitivity level.

The adequacy of using ORSA across business areas with material risks should be reviewed. Business areas should preferably have assessment tools available to help them understand the effect of their decisions on the solvency and risk assessments of the insurer.

The adequacy and sufficiency of key risk indicators and information to inform management and support using the ORSA in their business areas should be reviewed.

In practice, ORSA reporting is often subject to an annual independent assessment, during which the independent reviewer checks that the GOI 3.1 requirements were met. A reviewer assesses changes made since the previous ORSA and checks whether management engaged in the ORSA process by implementing recommendations previously made.

9.10 ORSA report and executive summary

GOI 3.1 specifies that an ORSA report should contain at least the following information:

- “Current and projected capital levels relative to minimum regulatory capital requirements and target levels.
- Actual outcomes of applying the ORSA over the period relative to the planned outcomes in the previous ORSA report.
- Material changes to the ORSA since the previous ORSA report.
- Details and outcomes of stress testing and scenario analysis.
- A breakdown of capital usage over the planning horizon, as relevant, by material business activity, the geographical spread of exposures, and risk types.
- Assessments of anticipated changes in the insurer’s risk profile or capital management processes over the planning horizon.
- ORSA review feedback, including any previous recommendations for change and how those recommendations have been, or are being, addressed.
- References to supporting documentation and analysis.”

Without information on how the insurer has used and embedded the ORSA, the ORSA process may be seen as compliance-driven and not thoughtfully used in the forward-looking strategic decision-making processes.

The executive summary is shorter than the ORSA report and is often ideal for highlighting adequate use of the ORSA across material risks. The executive summary of the ORSA report provides a concise summary of the ORSA process. Since some stakeholders may choose to read the executive summary only and not the full ORSA report, the executive summary is essential and should contain critical information.

When business information is considered confidential, the executive summary may provide limited information only on strategic deals. However, business decisions should adequately consider the potential impacts on the insurer’s own risk and solvency assessment.

The executive summary should mention outcomes of the risk analysis performed and justify whether management decisions adequately cater to policyholders' interests.

It is easy to understand this importance when considering a simple example from daily life. Many people would agree that a chocolate bar is tasty and would eat it in a minute without thinking about it. However, there are consequences to eating a chocolate bar. Many people may not be allowed to eat it for vastly different reasons. Also, each person consumes different quantities of chocolate based on their specific decision-making factors. Similarly, business decision-making is more complex than it may seem, and the ORSA report and executive summary should give those insights and inputs that are important for management to consider a holistic view in their decision-making.

9.11 Governance

Section 30 of the Act mentions that an insurer must adopt, implement and document an effective governance framework that provides for the prudent management and oversight of its insurance business and adequately protects its policyholders' interests.

The BoD of an insurer is responsible for meeting the requirements imposed on an insurer under the Act, irrespective of the delegation or outsourcing of any responsibilities. GOI 3.1 mentions that an insurer must demonstrate that each ORSA plays a vital role in its system of governance.

Insurers generally have financial and actuarial risk committees to support governance objectives. The terms of reference of such a committee mention the mandate and members. The relationship between such a committee and the BoD should be clear, and the committee should provide relevant reporting to the BoD.

This paper's objective is not to provide complete information on the insurer's system of governance. The actuarial and risk management control functions, and critical financial risk management policies regarding ORSA – areas where actuaries can play a pivotal role in influencing the extent of embedding the ORSA – are introduced below.

9.11.1 ACTUARIAL CONTROL FUNCTION

As per GOI 3 Risk Management and Internal Controls for Insurers ("GOI 3" in this paper), an insurer's actuarial function is responsible for providing advice to the BoD and senior management on:

- the ORSA and the assumed management actions, and
- the research, development, validation, and use of internal models for internal actuarial or financial projections or solvency purposes as in the ORSA.

9.11.2 RISK MANAGEMENT CONTROL FUNCTION

GOI 3 mentions that an insurer should have an effective risk management function to promote a sound risk culture and assist with identifying, assessing, monitoring, and mitigating material risks.

The risk management control function is integral to the ORSA process and production of the ORSA report, so it is well-placed to motivate increased embedding of the ORSA.

9.11.3 FINANCIAL RISK POLICIES

GOI 3 mentions that an insurer must, at a minimum, have policies approved by the BoD that address material risks and risk areas. It lists financial risk policies, which are not outlined here. However, below are extracts of the Capital Management Policy and the ORSA Policy that are highly relevant to ORSA.

A capital management policy should provide the internal capital planning process. GOI 3 mentions that the policy should cover the following:

- “The insurer’s strategy for ensuring adequate capital is maintained over time.
- Specific, quantifiable internal capital targets allowing for the insurer’s ORSA reviews.
- The insurer’s regulatory capital requirements.
- Means available for sourcing additional capital where required.
- Identification and measurement of risks that may result in capital shortfalls.
- Actions to be taken where capital shortfalls occur or are likely to occur.
- Management and regular review of capital.
- Monitoring compared to required and target levels.
- Independent review of the capital management process.”

An ORSA policy should ensure results of the ORSA are adequately embedded in the capital management process. An ORSA policy should provide that the BoD, senior management, risk management, and actuarial functions are appropriately engaged in the ORSA process. GOI 3 mentions that the policy should cover the following:

- “Processes in place to conduct the ORSA, including how the forward-looking perspective is addressed and how the timeframe is justified.
- Consideration of the link between the risk profile, the approved risk limits, and the overall solvency needs.
- Stress testing and sensitivity analysis approaches.
- Data quality requirements.
- Out-of-cycle ORSA triggers.
- Areas of the ORSA which are subject to independent review.”

9.12 ORSA record

GOI 3.1 mentions that an insurer must maintain a record of each ORSA. It should include the outcomes of the assessment and its internal reports on each ORSA. The reports include internal management information on risk and capital management.

GOI 3.1 also mentions that the record of ORSA should be such that it can be reviewed without unreasonable effort by a third party. The record should be complete and accurate and include clear audit trails.

In practice, the ORSA record is generally an electronic folder containing the information reported on. Usually, sub-folders corresponding to the ORSA report's sections and a list of information providers (sources) are included. Version control for projections and capital requirements files is essential to ensure the correct files are used in the ORSA.

10. EMBEDDING ORSA: THE THEORY

10.1 What does embedding ORSA mean?

GOI 3.1 mentions that ORSA should be embedded in the decision-making processes of the insurer. This requirement is rephrased below by replacing some words with their definitions and adding descriptive details.

As per *Cambridge Dictionary*, below are definitions of relevant words:

- **Embedded:** “Existing or firmly attached within something or under a surface”
- **Existing:** “That exists or is being used at present”
- **Strategic:** “Helping to achieve a plan”
- **Decision-making:** “The process of making choices, especially important choices”
- **Important:** “Necessary or of great value”

In a nutshell, the embedding ORSA requirement is interpreted to mean the following:

ORSA is the base and should be used in the insurer's process of making important choices, especially for capital planning and management, to help achieve the business strategy.

10.2 Embedding ORSA (according to regulatory sources)

While researching for regulatory guidance on the requirements of embedding ORSA, the following sources were obtained (and are outlined in this section):

- The Insurance Core Principles (ICPs) of the International Association of Insurance Supervisors (IAIS)
- The SAM ORSA Readiness Questionnaire of the Financial Services Board (The FSB was dissolved in 2018; and is superseded by the Financial Sector Conduct Authority and the Prudential Authority)
- The Supervisory Statement SS19/16 Solvency II ORSA of the Prudential Regulation Authority (PRA).

The IAIS is a voluntary membership organisation of insurance supervisors and regulators from more than 200 jurisdictions. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry. Its objectives are to develop and maintain fair, safe, and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability. In this context, the IAIS has issued the ICPs as a globally accepted framework for insurance supervision.

Regarding ORSA, ICP 16 Enterprise Risk Management for Solvency Purposes mentions vital points. ICP 8 Risk Management and Internal Controls and ICP 17 Capital Adequacy are also referenced below. There is no framework or complete set of principles explicitly addressing what embedding ORSA means, but the following excerpts mention embedding requirements:

- “ORSA is a vital component of the ERM framework (ICP 16.0.3). ERM should be embedded in an insurer’s corporate culture to ensure the organisation contributes to risk awareness, feedback loops, and coordinated responses to risk management needs (ICP 16.0.5).”
- “An insurer should consider how to embed limits in its ongoing operations. This may be achieved by expressing limits in a way that can be measured and monitored as part of ongoing operations. Stress testing may provide an insurer with a tool to help ascertain whether the limits suit its business (ICP 16.4.6).”
- “An effective risk management system should provide that the insurer’s risk appetite, expressed in a risk appetite statement, is aligned with its business strategy and embedded in its day-to-day activities (ICP 8.1.2).”
- “The risk management system should be aligned with the insurer’s risk culture and embedded into the various business areas and units to have the appropriate risk management practices and procedures embedded in the key operations and structures (ICP 8.1.4).”
- “It is noted that an insurer’s capital management (about regulatory requirements and own capital needs) should be supported and underpinned by establishing and maintaining a sound enterprise risk management framework, including appropriate risk and capital management policies, practices, and procedures that are applied consistently across its organisation and are embedded in its processes. Maintaining sufficient capital resources alone is inadequate protection for policyholders without disciplined and effective risk management policies and processes (ICP 17.2.9).”

The SAM ORSA Readiness Questionnaire (of 2014) mentioned the following in respect of ‘Embedding ORSA’:

- “Results from the ORSA, as well as insights gained in the process, are linked to the strategic management and decision-making of the organisation.”
- “Risk assessments conducted as part of the ORSA are forward-looking.”
- “Consider the time each part of the process takes to produce an ORSA report.”

Section 4.3 of the Supervisory Statement SS19/16 Solvency II ORSA from the Prudential Regulation Authority (PRA) in the UK mentions that to demonstrate embedding of the ORSA, some firms have introduced high-level management information as part of the ORSA framework (an ‘ORSA dashboard’) that follows a similar structure to the ORSA report, but with up-to-date information presented visually, with tables, charts and key messages.

It is mentioned that this has enabled the BoD to revisit critical decisions taken periodically, analyse the current and future risk profile, assess material risk drivers, and challenge the firm's solvency assessment and strategy. It is stated that firms are encouraged to use methods such as these.

10.3 Does ChatGPT know what embedding ORSA means?

Following the research completed, ChatGPT was consulted to hear whether it knows what embedding the ORSA means. Appendix A contains the feedback.

11. PRACTICAL PROPOSALS TO EMBED ORSA

When the time taken to produce the ORSA is measured and monitored over time, it becomes clearer which processes take the most time and where efficiency improvements are required. When it is known how long the ORSA typically takes, management's expectations may align with that.

When management is required to perform an out-of-cycle ORSA, the ORSA output is required within tighter timelines than the annual ORSA. The out-of-cycle ORSA processes should allow for this expectation of faster turnaround but still provide quality and accurate results.

Specific sub-processes (e.g., data and capital requirement calculations) may be carefully selected for automation to achieve efficiencies. Manual data processes considered reliable, mature, and repeatable without requiring human judgement or intervention for process completion may be considered for automation. However, automation may introduce technology concentration risk when vital processes are automated, and no manual backup process exists.

For example, when a minor issue occurs in an automated process that contains sub-processes, it may result in none of the integrated processes producing outcomes. In contrast, a manual process may sometimes have fewer continuity risks. It is essential to find the optimal mix of automated and manual processes, and preferably an automatic process should offer a manual process as a backup option.

Following the research on embedding the ORSA and reflecting upon work experiences, below are practical proposals to help improve the embedding of the ORSA for a typical insurer.

The ORSA Process Diagram (Figure 1) illustrates the ORSA sub-processes; sub-processes numbered one to ten are covered below. The proposals are presented visually, and reasons for the proposals are provided.

11.1 Information collection

In respect of the information collection sub-process, the following proposals are offered to improve the embedding of the ORSA (Figure 2):

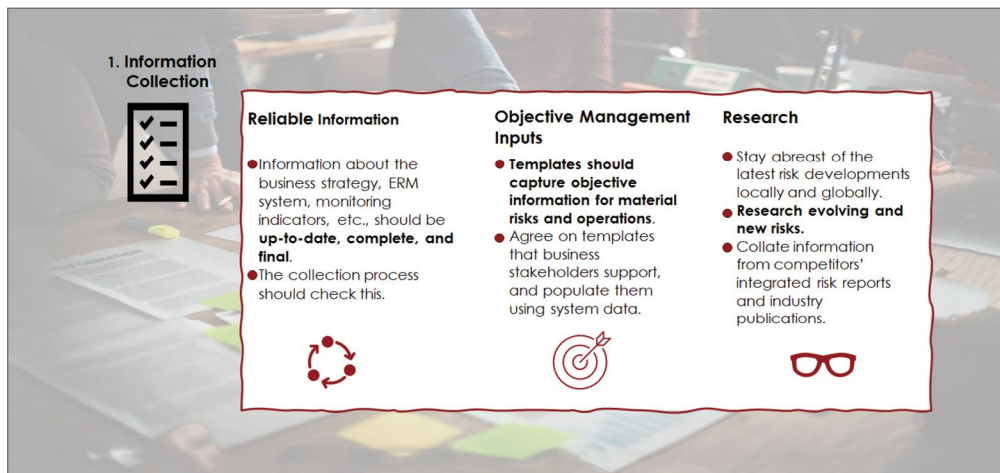


FIGURE 2 Practical proposals to embed ORSA (1)

The reasons for the proposals are as follows:

- Accuracy of inputs into the ORSA is pivotal to avoid a “garbage in, garbage out” ORSA. Multiple versions of documents may exist, but the ORSA process requires reviewed, final, and approved inputs.
- Templates should be thoughtfully designed to capture the specific information needed for risk assessment. Since management provides these inputs, they should understand why each input field is required. Fields should require objective details, for example, factual data relating to operations, and avoid subjective self-assessments.
- Research ensures that management remains abreast of the latest risk developments in the external environment. A risk considered new for the insurer may already exist at another insurer. Researching the integrated risk reports of competitors and industry publications is deemed helpful information during the ORSA process.

11.2 Data

In respect of the data sub-process, the proposals in Figure 3 are offered to improve the embedding of the ORSA.

The reasons for the proposals are as follows:

- ORSA reports generally provide qualitative commentary on the integrity of data. However, it is often unclear whether data accuracy has improved or deteriorated since the previous ORSA.
- Specific quantifications to illustrate the importance of input fields (e.g., a range of results before and after input adjustments) more accurately and objectively communicate the extent of data issues and improvements or deteriorations since the previous ORSA.

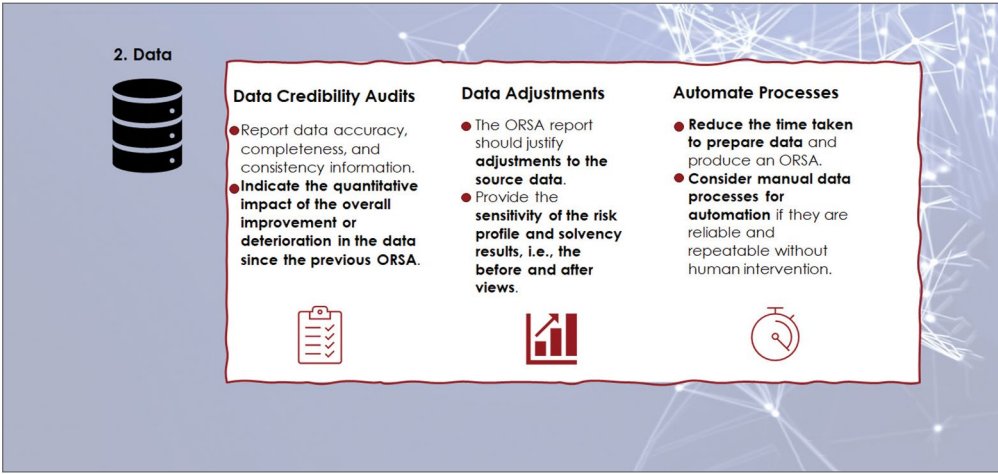


FIGURE 3 Practical proposals to embed ORSA (2)

- By automating processes (e.g., data preparation and collation processes), actuaries and financial risk specialists may focus more on deep analysis to gain valuable insights.

11.3 Business strategy

In respect of the sub-process for the business strategy, in Figure 4, proposals are offered to improve the embedding of the ORSA. The reasons for the proposals are as follows:

- The insurer may want aggressive growth, but this may not happen in practice. A projected increase in premium income from the current position should be well understood and considered realistic.
- When the experience deviates materially from the business strategy (expected

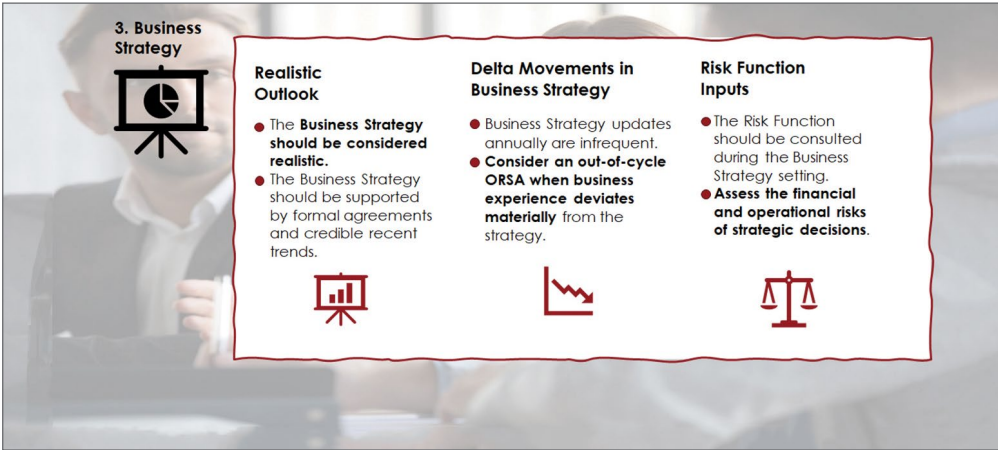


FIGURE 4 Practical proposals to embed ORSA (3)

- experience), the ORSA based on the planned experience is inaccurate. In such a situation, an out-of-cycle ORSA should be considered to revise the ORSA outputs.
- The risk function should confirm that the critical risk assessments and reviews have been performed and that the ORSA is aligned with the business strategy. If the risk function was not sufficiently and adequately included in assessing the business strategy (e.g., new strategic initiatives), the risk function should provide this feedback to the BoD.

11.4 Risk appetite

In respect of the risk appetite sub-process, the proposals in Figure 5 are offered to improve the embedding of the ORSA.

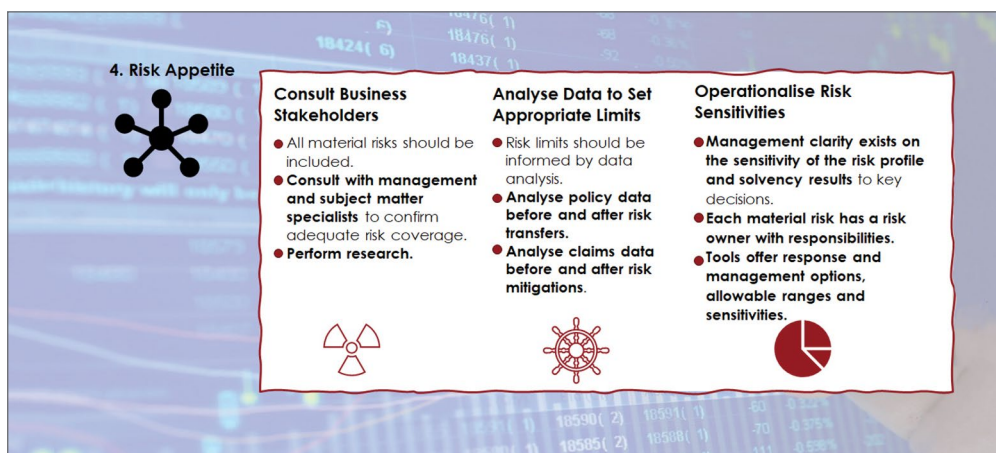


FIGURE 5 Practical proposals to embed ORSA (4)

The reasons for the proposals are as follows:

- Management should be consulted to confirm that all material risks are included in the risk appetite setting process. The data collected may not give the whole story about the risks, and sometimes no data is available, so inputs from management are pivotal.
- Large amounts of data may be captured and stored but not analysed and used during the risk appetite setting. The data reflect the facts about the insurer's exposures, and through deep analysis, data may be transformed into valuable information and insights.
- When risk appetite is defined at an executive level, e.g., the EC coverage ratio target is equal to or above 1.40, it may be unclear to management how their day-to-day decisions impact the ratio. Information and tools should be available to help them understand the sensitivity of ORSA results to critical risk drivers that they are responsible for. For example, when the CFO has a tool to understand the sensitivity

of the interest rate risk to decreases in the duration of bond investments, it informs decision-making.

11.5 Risk identification, evaluation, and management

In respect of the risk identification, evaluation, and management sub-processes, the proposals in Figure 6 are offered to improve the embedding of the ORSA.

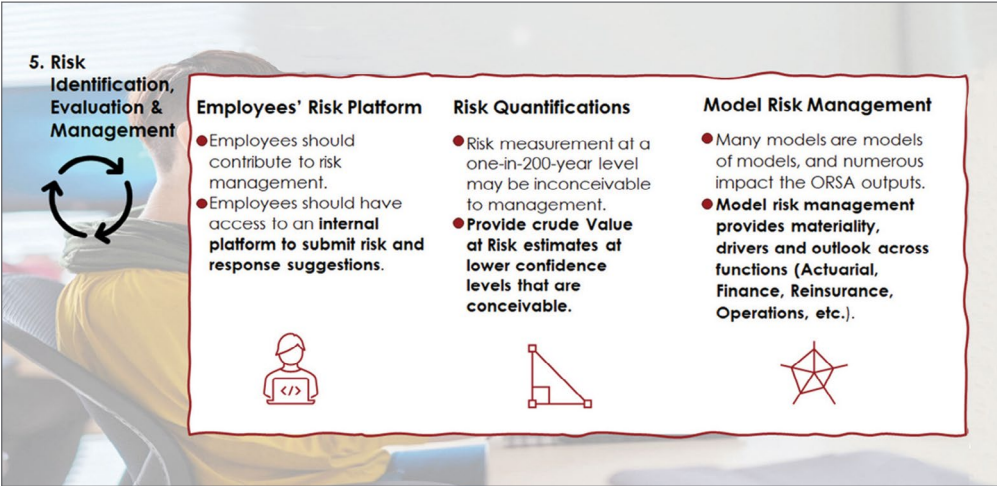


FIGURE 6 Practical proposals to embed ORSA (5)

The reasons for the proposals are as follows:

- Generally, an employee knows their job well and may be able to identify new and noteworthy risks that others overlook. With the availability of an internal tool for employees to share their ideas about risks and response actions, employees may feel they contribute toward protecting their employer. This may add to their sense of purpose and overall job satisfaction.
- Risk quantifications at a one-in-200-year level (99.5% confidence level) may feel abstract. Management may engage more in the ORSA process when brainstorming adequately considers conceivable and familiar risks.
Risk quantifications may feel more conceivable when past events serve as examples when risk quantification results are interpreted. Management is familiar with past events and has a storyline or reasonable understanding. Management may understand how severe a particular event was (relative to the median) and reflect on the extent to which past management actions had the desired financial effects.
Data input for modelling should be presented and summarised to illustrate potential trends, volatilities, concentrations, and correlations. For example, analyse the insurer's experience over the past five years and report the data at various percentiles. When data is transformed into useful information, management may

engage more in the ORSA process because there is more understanding of the risks.

- The insurer has a large number of tools that are used across the business. For example, the ORSA process consists of many sub-processes, each with many tools. Model risk management should consider these tools' inputs, approaches, and outputs. A model may consist of many models, so the flow between models should be clear. For example, input into an actuarial model may come from the output of an underwriting tool.

Model risk governance requires a list of models with information about the materiality impact of the tool on the ORSA outputs, the frequency of review, the state of model documentation, the judgement involved in setting input values and building models, and the credibility of data. It should also cover the steps required to rectify identified gaps and development areas.

11.6 Balance sheet and income statement projections

In respect of the balance sheet and income statement projections sub-processes, the proposals in Figure 7 are offered to improve the embedding of the ORSA.

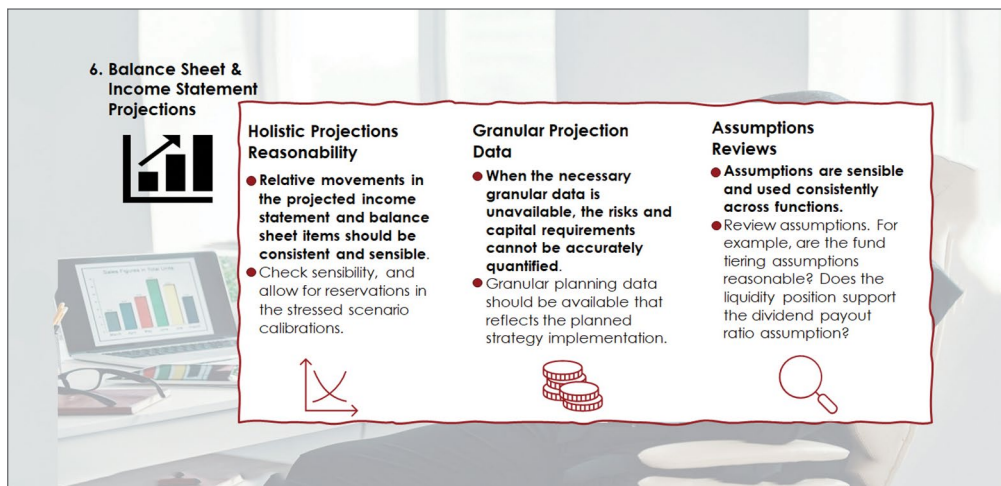


FIGURE 7 Practical proposals to embed ORSA (6)

The reasons for the proposals are as follows:

- Sometimes, the relative year-on-year movements for the income statement and balance sheet projection items do not appear reasonable (e.g., the premium growth is considered too optimistic), so projections should be challenged and revised. The assumptions for organic growth (e.g., an annual increase in premiums) and inorganic growth (e.g., acquisitions of policy books) should preferably be supported by credible recent experience.

Management should understand the ORSA output's key drivers and appropriately allow for reservations about the business strategy when performing stressed scenarios or setting the risk appetite RAG levels.

- When more specific and detailed data about the business strategy initiatives are available, fewer assumptions are required when capital requirements are calculated. When the projection is based on high-level strategic information and not accompanied by sufficiently detailed and relevant data, projected risks and capital requirements may not be accurate.
- The assumptions implemented by different functions (e.g., finance and actuarial teams) should be consistent. Context should be provided to justify the assumptions made.

Finance assumptions, e.g., the expected return on investment funds and expected exchange rates, affect the projected solvency levels. The ORSA relies on assumptions about the expected dividend payout level and the liquidity of funds. Assumptions in the ORSA should reflect the typical experience of the insurer and be considered reasonable reflections of the expected experience.

11.7 Capital requirement and solvency projections

In respect of the capital requirement and solvency projections sub-processes, the proposals in Figure 8 are offered to improve the embedding of the ORSA.

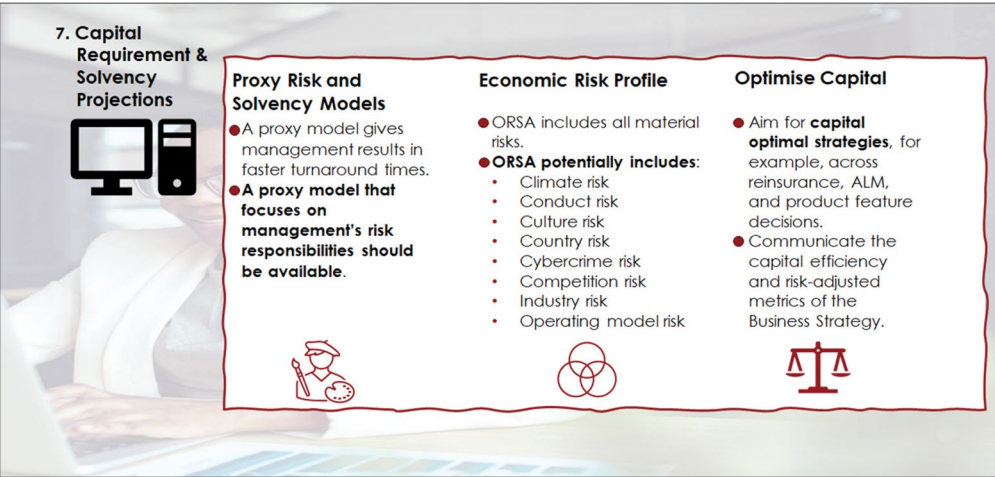


FIGURE 8 Practical proposals to embed ORSA (7)

The reasons for the proposals are as follows:

- ORSA results may be required as soon as possible after a significant event in the industry or the country, whereas the ORSA process may take months to complete. When a proxy EC model is available, key inputs may be recalibrated to allow for the

latest available information, and the indicative effect on the solvency cover may be provided promptly.

- Insurers may neglect their ORSA views and rely too much on SCR. SCR covers prescribed underwriting, market, and operational risks. SCR does not cover all material risks that the insurer is exposed to.

The insurer may also be exposed to other material risks that should be covered in their ORSA. Some of these risks may be considered new risks.

Examples of such risks that should be considered for an ORSA are mentioned below.

- **Climate risk:** Climate changes may affect the quality of risks insured and increase the frequency and severity of certain losses.
If the insurer's actions (or lack thereof) regarding climate change are perceived as not socially responsible, it may negatively affect its reputation. This may be a risk type when policyholders decide to boycott insurers that are not socially responsible.
- **Conduct risk:** There may be new compliance requirements for which insurers do not have internal processes implemented in time. For example, there are increased inverter and solar panel installations across SA, and the insurer's compliance processes may not be in place in time.
- **Culture risk:** The insurer should assess its culture because this may impact the efficiency and effectiveness of risk management practices. For example, an insurer may be too slow to implement mitigating actions when its internal processes are not integrated.
- **Country risk:** Country-wide risks potentially broadly impact claims frequencies and severities. For example, electricity load-shedding in SA also affects the water supply, impacting geyser lifetimes.
Social unrest potentially increases the general riskiness of the insurer's environment. As such, some risks may become uninsurable and outside the insurer's appetite.
- **Cybercrime risk:** The insurer should assess its potential exposure to cyber risk events.
- **Competition risk:** The insurer should consider the pros and cons of an increase in the number of competitors because some consequences may benefit all. The industry may grow when new insurers enter the market with innovative products. Should an insurer compete with another insurer regarding a similar flagship product, the impact of competition may be more detrimental to the insurer.
- **Industry risk:** The industry as a whole or a particular line of business in the industry may shrink, resulting in differences in the pattern of business growth to which the insurer has become accustomed.
- **Operating model risk:** The insurer's operating model may overly rely on a handful of key brokers. New entrants into the insurance industry may be overly reliant on technology and the uninterrupted offering of digital services.

The above risks are examples only, and the insurer may be exposed to specific risks (e.g., liquidity) that should be allowed for in its ORSA risk profile. By performing research and considering publications of various industries (e.g., science publications for climate risk), it is possible to monitor these risks.

Internal information and data should be carefully analysed to form a view regarding the materiality of these risks. Increased awareness about these risks may also increase the accuracy of risk quantifications in the future. For example, when management engages in the ORSA process, they may identify where changes are needed in data or underwriting processes to obtain inputs supporting future modelling efforts.

CFOs are interested in risk-adjusted return metrics over the planning period. The CFO's decisions may be holistic by considering the most optimal business decision options from different risk and solvency assessment perspectives.

11.8 Stressed scenarios

In respect of the stressed scenarios sub-process, the proposals in Figure 9 are offered to improve the embedding of the ORSA.

The reasons for the proposals are as follows:

- It is essential to understand the impact of stressed scenarios because it potentially increases awareness about the vulnerabilities of the insurer and the business strategy. It informs whether the insurer requires risk transfer (e.g., via reinsurance).
 - Insurers should consider the financial effects of stressing their most material and complex internal risks, e.g., system downtime and other IT risks.
- Many potential stressed scenarios exist, but data may not be available to calibrate stresses and build quantification models. Qualitative assessments may need to be adopted, which is sometimes the case for operational risk assessments.

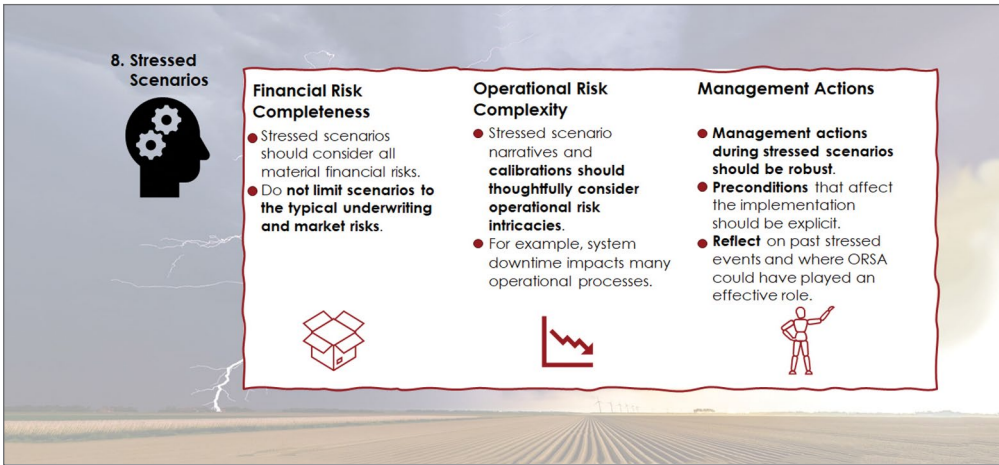


FIGURE 9 Practical proposals to embed ORSA (8)

- Management should reflect on past stressed events and business response and management decisions made at the time. They should consider missed opportunities where the ORSA process could have been used to manage the highlighted events' various consequences effectively.

The robustness of management actions is essential. In respect of the embedding of the ORSA process, the proof is in the pudding. The pudding refers to whether management actions are implementable during stressed situations and whether the planned financial effects are realisable in short periods to improve the insurer's solvency.

11.9 Reviews

In respect of the reviews sub-process, the proposals in Figure 10 are offered to improve the embedding of the ORSA.

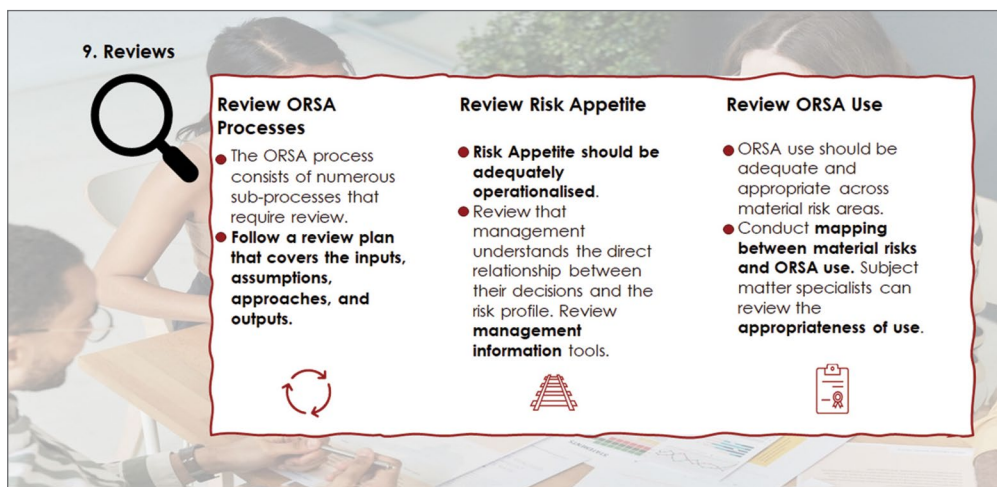


FIGURE 10 Practical proposals to embed ORSA (9)

The reasons for the proposals are as follows:

- The ORSA process consists of sub-processes with inputs, assumptions, approaches, and outputs that may require review.
An insurer's annual SCR QRT must be audited, but that is not true for the ORSA figures. The ORSA processes and models should be reviewed to improve the quality and credibility of the ORSA outputs. The ORSA projected capital coverage figures should be compared to actuals quarterly, and differences should be explained and governed appropriately.
- When an insurer does not consciously understand their risks and the consequences of their decisions, their decision-making process lacks a necessary longer-term perspective.

- The reviewer should check for adequate use of the ORSA in decision-making across business areas with material risks.

11.10 ORSA report and executive summary

In respect of the ORSA report and executive summary sub-processes, the proposals in Figure 11 are offered to improve the embedding of the ORSA.

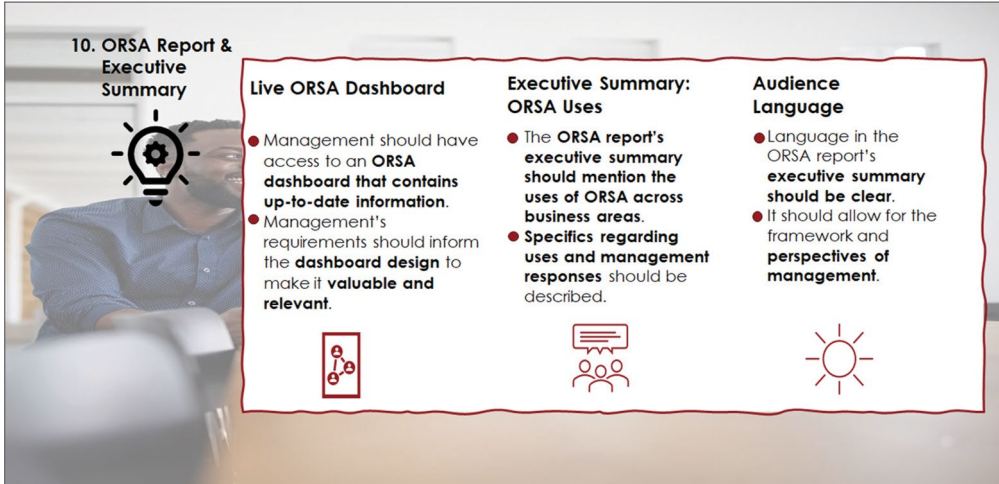


FIGURE 11 Practical proposals to embed ORSA (10)

The reasons for the proposals are as follows:

- When management has access to up-to-date ORSA information, the information may be considered when business decisions are made. The information in the static ORSA report may be regarded as outdated.
 - The ORSA report's executive summary should mention the extent of using and embedding the ORSA. It should indicate how management actions for material risks are linked to the ORSA outputs. The executive summary should focus on the uses of the ORSA across relevant business areas.
 - The ORSA report may contain jargon information because some risk and actuarial terminologies are technical. The executive summary's content should be clear and jargon-free so that management understands the content well.
- When the ORSA report's executive summary is written from the framework and perspectives of management, they are more likely to engage in the ORSA process and contribute to embedding the ORSA.

12. FUTURE DIRECTION

Recent years have been tumultuous globally, in SA and the insurance industry (e.g., COVID-19, electricity loadshedding, social unrest, severe floods, etc.), resulting in new

and evolving risks for insurers. Insurers with embedded ORSAs are more prepared to respond to the unique tests of the current times.

The Act has been in force for five years, but the extent of embedding the ORSAs across South African insurers has yet to be discovered. The frequency and severity of existing risks may materially deviate from planned levels in volatile times, requiring out-of-cycle ORSAs to be performed.

In recent years industry developments have focused on IFRS 17 implementation, effective on 1 January 2023. It is foreseen that the industry will refocus on risk management (e.g., embedding the ORSA) in the coming years. Since there is no well-known industry implementation framework or complete set of principles for embedding the ORSA, it is envisaged that this gap should be filled soon.

13. CONCLUSION

The paper indicates that ORSA is not one process (e.g., actuarial solvency calculations) but a collection of many sub-processes across the insurer's finance, risk, actuarial, reinsurance, information technology, operations, and other vital functions. The quality of ORSA outputs is dependent on implementing and integrating these sub-processes effectively.

The paper explores what embedding the ORSA means and highlights that it essentially means that ORSA should underpin many of the insurer's choices across material risks, especially concerning capital planning and management, to help achieve the business strategy.

The ORSA process diagram (Figure 1) illustrates the sub-processes of the ORSA. Embedding the ORSA is a journey, and an insurer should celebrate small wins and incremental improvements in each sub-process.

Figure 12 reiterates some vital points to remember regarding the ORSA and embedding requirements.



FIGURE 12 Key points

Acknowledgements

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Thank you to the authors of the references mentioned below.

APPENDIX A

Does ChatGPT know what embedding ORSA means?

A few months after drafting the paper, Appendix A was added to cover the application of ChatGPT. The objective was to understand whether ChatGPT knows what embedding ORSA means. ChatGPT is an Artificial Intelligence tool and a trending topic, with some saying it can solve anything.

It took a few seconds to sign up as a user, and it was simple to use. Below are the outcomes of using the free version.

As a first step, ChatGPT was asked whether it knew what embedding ORSA meant. It replied, 'I'm sorry, but I couldn't find any specific information about embedding ORSA,' but offered a general understanding of the words 'embedding' and 'ORSA.' It explained the word 'embedding' in the context of machine learning that was not applicable and provided the following understanding of ORSA:

ORSA (Own Risk and Solvency Assessment) is a risk management framework primarily used in the insurance industry. It involves the assessment and quantification of an insurer's overall risk profile, including all material risks to its solvency and financial condition. ORSA aims to ensure that insurers have adequate capital and risk management practices in place to address potential risks and uncertainties. It involves the identification of risks, their measurement, and the development of strategies to mitigate or manage those risks effectively.

As a second step, ChatGPT was asked whether it was familiar with an ORSA process. It offered the following response:

ORSA (Own Risk and Solvency Assessment) is a risk management framework primarily used in the insurance industry. It is designed to ensure that insurers have a comprehensive understanding of their risk profile and that they maintain adequate capital to support their operations and obligations. The ORSA process involves several key steps, which can vary slightly depending on regulatory requirements and the specific circumstances of the insurer. Here is a general overview of the ORSA process:

1. Establish the ORSA Framework: The insurer defines its ORSA framework, which includes the governance structure, roles, and responsibilities of individuals involved in the process.
2. Identify and Assess Risks: The insurer identifies and evaluates all material risks it faces. This includes insurance-related risks, such as underwriting, pricing, and claims risks, as well as non-insurance risks, such as operational, market, liquidity, and strategic risks. The assessment involves quantifying the potential impact and likelihood of each risk.

3. **Determine Risk Appetite and Tolerance:** The insurer sets its risk appetite and tolerance levels, which represent the amount of risk it is willing to accept and the level of risk it considers acceptable. This helps in aligning risk-taking decisions with the overall business objectives and risk management strategy.
4. **Scenario Analysis and Stress Testing:** The insurer performs scenario analysis and stress testing to assess the impact of different adverse scenarios on its financial position. This involves projecting the financial performance and solvency position of the insurer under various hypothetical scenarios.
5. **Capital Assessment:** The insurer evaluates its capital adequacy by considering the potential impact of identified risks and adverse scenarios. This involves calculating the available capital, taking into account regulatory requirements and internal risk tolerance levels.
6. **Risk Mitigation and Management:** The insurer develops and implements risk mitigation strategies and actions to address identified risks. This can include measures such as risk transfer through reinsurance, risk diversification, risk controls, and other risk management techniques.
7. **Documentation and Reporting:** The insurer documents the entire ORSA process, including the assessments, methodologies, assumptions, and outcomes. It prepares a comprehensive ORSA report that provides an overview of its risk profile, capital adequacy, and risk management strategies. The report is usually shared with relevant stakeholders, such as regulators, the board of directors, and senior management.
8. **Review and Continuous Improvement:** The insurer periodically reviews and updates its ORSA process to ensure its relevance and effectiveness. This involves incorporating lessons learned from the previous assessment cycles and adapting to changes in the risk landscape or regulatory requirements.

The ORSA process is an ongoing and iterative process that helps insurers maintain a robust risk management framework and promote financial stability in the industry. It assists insurers in proactively identifying and managing risks to ensure their solvency and long-term viability.

As a third step, ChatGPT was asked whether it knew how to embed the ORSA. It offered the following response:

To embed the ORSA (Own Risk and Solvency Assessment) framework within an organisation, you can follow these steps:

1. **Understand Regulatory Requirements:** Familiarise yourself with the regulatory requirements and guidelines related to ORSA in your jurisdiction.

- Different countries or regions may have specific regulations governing ORSA implementation in the insurance industry.
2. **Establish Governance Structure:** Define the governance structure for ORSA implementation. This includes identifying key individuals responsible for overseeing and managing the ORSA process, such as a designated ORSA committee, risk management team, or senior management representatives.
 3. **Conduct Risk Assessment:** Identify and assess all material risks faced by your organisation. This involves evaluating insurance-related risks (e.g., underwriting, pricing, claims) as well as non-insurance risks (e.g., operational, market, liquidity, strategic). Quantify the potential impact and likelihood of each risk to understand their significance.
 4. **Define Risk Appetite and Tolerance:** Determine the organisation's risk appetite and tolerance levels. This establishes the acceptable level of risk-taking and helps align risk management decisions with business objectives. Define risk limits and thresholds based on regulatory requirements and internal risk tolerance.
 5. **Perform Scenario Analysis and Stress Testing:** Conduct scenario analysis and stress testing to assess the impact of adverse events or scenarios on your organisation's financial position. This involves projecting financial performance and solvency under different hypothetical situations. Identify vulnerabilities and evaluate the organisation's resilience to shocks.
 6. **Evaluate Capital Adequacy:** Assess the organisation's capital adequacy by considering the impact of identified risks and adverse scenarios. Calculate available capital, taking into account regulatory requirements and internal risk tolerance. Ensure that the organisation has sufficient capital to support its operations and obligations.
 7. **Develop Risk Mitigation Strategies:** Develop and implement risk mitigation strategies to address identified risks. This includes measures such as risk transfer through reinsurance, risk diversification, risk controls, and other risk management techniques. Establish action plans and monitor their effectiveness.
 8. **Document and Report:** Document the entire ORSA process, including assessments, methodologies, assumptions, and outcomes. Prepare a comprehensive ORSA report that provides an overview of the organisation's risk profile, capital adequacy, and risk management strategies. Share the report with relevant stakeholders, such as regulators, the board of directors, and senior management.
 9. **Monitor and Review:** Continuously monitor and review the effectiveness of the ORSA process. Periodically reassess risks, update risk assessments, and adjust risk management strategies as needed. Stay informed about evolving regulatory requirements and industry best practices.

10. Foster a Risk Culture: Promote a risk-aware culture within the organisation. Encourage proactive risk management, open communication, and continuous learning. Embedding ORSA requires commitment and engagement from all levels of the organisation.

Remember that the specific implementation of ORSA may vary depending on regulatory requirements and the unique circumstances of your organisation. It is essential to seek guidance from regulatory authorities and engage with industry experts to ensure compliance and best practices in your specific jurisdiction.

As a fourth step, ChatGPT was asked whether it knew about the new risks for insurers. It offered the following response:

Insurers face a wide range of risks, and the landscape is continually evolving. Here are some examples of new and emerging risks that insurers may need to consider:

1. **Cyber Risk:** With the increasing reliance on technology and digital infrastructure, insurers face the risk of cyber attacks, data breaches, and operational disruptions. Cyber risk can result in financial losses, reputational damage, and compromised customer data.
2. **Climate Change and Natural Disasters:** Climate change has led to an increase in the frequency and severity of natural disasters such as hurricanes, floods, wildfires, and storms. Insurers need to assess and manage the potential impact of these events on their underwriting and claims activities.
3. **Pandemics and Health Crises:** The COVID-19 pandemic has highlighted the significant risks posed by infectious diseases. Insurers may face challenges related to business interruption claims, event cancellation, and health insurance coverage. Managing the financial implications of future pandemics or health crises is a critical consideration.
4. **Technological Disruption:** Rapid advancements in technology, such as artificial intelligence (AI), automation, and blockchain, can disrupt traditional insurance business models. Insurers need to adapt to these changes, explore new opportunities, and ensure they have the necessary skills and infrastructure to leverage emerging technologies.
5. **Regulatory and Compliance Risks:** Evolving regulatory frameworks and compliance requirements pose risks to insurers. Compliance with changing laws and regulations, including data protection and privacy regulations, anti-money laundering (AML) requirements, and consumer protection measures, is crucial to avoid penalties and maintain a good reputation.
6. **Social and Demographic Shifts:** Societal and demographic changes, such as population aging, shifting consumer preferences, and socioeconomic

- disparities, can introduce new risks for insurers. Understanding and responding to these shifts is important to stay relevant and effectively address customer needs.
7. **Geopolitical and Economic Uncertainty:** Political instability, trade disputes, economic downturns, and currency fluctuations can have a significant impact on insurers' investment portfolios, profitability, and risk exposure. Insurers must monitor and manage these macroeconomic risks effectively.
 8. **ESG (Environmental, Social, and Governance) Factors:** Environmental, social, and governance considerations are gaining prominence in the insurance industry. Insurers need to evaluate and manage the risks associated with climate change, sustainability, social responsibility, and ethical business practices.
 9. **Reputational Risk:** In the age of social media and instant communication, reputational risks can arise from public perception, customer dissatisfaction, employee misconduct, or unethical behaviour. Insurers must have robust risk mitigation strategies and effective communication plans to protect their reputation.
 10. **Emerging Insurance Products and Coverage:** As new industries, technologies, and risks emerge, insurers face the challenge of developing innovative insurance products and coverage to meet evolving customer needs. These may include coverage for autonomous vehicles, drone operations, cybersecurity, or new healthcare technologies.

It's important for insurers to regularly assess their risk landscape, stay informed about emerging risks, and adapt their risk management strategies to effectively navigate these challenges.

As a fifth step, ChatGPT was asked about the regulatory ORSA requirements. ChatGPT was unfamiliar with GOI 3.1. ChatGPT replied, "I apologise for any confusion caused. However, as of my knowledge cutoff in September 2021, there is no known 'Prudential Standard GOI 3.1' specifically related to Own Risk and Solvency Assessment (ORSA) for insurers".

When asked about the Insurance Core Principles (ICPs), ChatGPT provided a general understanding and mentioned that 26 ICPs address specific insurance supervision aspects. It said 26 existed; however, the Insurance Core Principles and Common Framework for the Supervision of Internationally Active Insurance Groups Updated November 2019 paper mentioned 25. The IAIS website listed each ICP from 1 to 25, but there was no information about an ICP 26.

When asked about ICP 26, ChatGPT described it as 'Macroprudential Surveillance and Insurance Supervision.' When asked about ICP 1 to ICP 26, ChatGPT listed each ICP,

of which the first 25 ICPs matched what was available on the IAIS website. However, ChatGPT now mentioned ICP 26 as 'Cross-Border Cooperation and Coordination on Crisis Management.'

Regarding where to use ChatGPT during the ORSA process, it could be a guidance tool while performing research because it offered structured information efficiently and effectively. However, ChatGPT did not disclose sources. As such, the accuracy of the information cannot be verified independently. It did not tell when and how judgement was applied.

Regarding ORSA reporting, the generic information from ChatGPT is not specific to the insurer's forward-looking risk profile. A more comprehensive ORSA report with more general information does not mean a higher quality ORSA report. A high-quality ORSA report reflects the materiality and relevance considerations of the insurer.

Regarding process automation, ChatGPT may help find technical inputs (e.g., programming language code) that can be used to improve the implementation of specific ORSA sub-processes. However, these may not meet an insurer's IT policy and control requirements. Careful analysis and thinking are required to identify where opportunities for implementation improvements exist, but management should have clarity about potential new risks that are introduced.

REFERENCES

The sub-headings below correspond with those in the report. Sources used in more than one section are referenced once only in the earliest section where it occurs.

Introduction

The Insurance Act 18 of 2017, *Government Gazette* Republic of South Africa

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Prudential Standard GOI 3.1 Own Risk and Solvency Assessment (ORSA) for Insurers

[Prudential Standard GOI 3.1 - Own Risk and Solvency Assessment \(ORSA\) for Insurers.pdf \(fsca.co.za\)](#)

Background

Solvency Assessment and Management Report on the Pillar II Readiness Survey

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Jaws ratio

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Prudential Standard FSI 2.1 Valuation of Assets and Liabilities Other than Technical Provisions

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Prudential Standard FSI 2.2 Valuation of Technical Provisions

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Embedding ORSA

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Appendix A – Does ChatGPT know what embedding ORSA means?

ChatGPT website: <https://chat.openai.com/>