

Navigating the Future with “Own Risk and Solvency Assessment”(ORSA)



Innovating Risk Management through Scenario Based Strategy

Navigating the Future through ORSA Scenarios

The European rules for insurance risk management have been renewed. The EU directive Solvency II (SII) aims to improve insurer's risk assessment by obliging insurance firms as from 2016 to assess their solvency needs through their Own Risk and Solvency Assessment (ORSA), in which scenarios play an important role. The umpteenth regulatory nuisance, critics say. However, De Ruijter Strategy knows from decades of experience with scenario based strategy, as well as working with the Dutch Association of Insurers and Nyenrode Business Universiteit, that SII provides a unique opportunity for dealing with downside risk. Moreover it enables the use of uncertainty as a source of opportunity (upside risk), provided scenarios are integrated into the firm's strategic decision-making processes. Insurers should seize SII as an opportunity to make scenario-based, future-oriented thinking the basis of their strategy for success. Foresight is no longer a mere nice-to-have, but a must-have to successfully navigate the uncertain future of insurance.

Past risks are no guide to the future¹

The limitation of current risk management practices is that models of future risks are often based on historic empirical data. The financial crisis of 2008 showed us how past results are no indication for future development. In 2007 American mortgage bonds still enjoyed AAA status. After all, the housing prices had not decreased for the past ten years so there was no statistical risk for prices to increase.

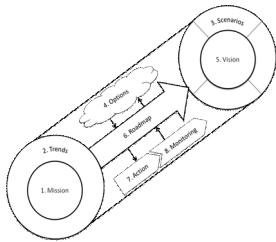
As long as mortgage related bonds were trading, indications of possible risks such as the increase of interest and unemployment rates were ignored. Also the risk that AAA bonds not only consisted of AAA mortgages, but also of mortgages with lower credit quality, was discredited. What seemed a safe investment was in reality a risky strategy for which firms like Lehman Brothers have paid the price. Had firms not been blinded by predictions based on extrapolations of historical data, but expanded their view to other types of risks influencing their investment, firms could have invested in other, safer bonds or spread their risk in different ways to avoid significant losses and bankruptcy. Using this *law of large numbers* or linear projection as a basis for future

predictions also blinds risk management to black swans,² “unknowables,”³ or wild cards,⁴ unexpected events of large significance such as the invention of the internet and the impact of 9/11. With the use of scenarios insurance firms can get risks back on their radar and estimate them for what they are worth, thus profiting in times of uncertainty. This is why scenarios have become a “must-have” for the insurance industry through Solvency II and ORSA.

Solvency II embraces scenario based strategy

Almost all European insurers and reinsurers are required to comply with Solvency II.⁵ Solvency II sets the tone for insurance regulation across the globe and its core principles are adopted by the IAIS. For insurance companies in the EU, the European Parliament adopted Omnibus II in 2014, staying on track for the Solvency II directive to take effect on January 1st 2016. Its main aim is to protect policyholders, but also to boost levels of trust in the European financial industry by ensuring insurers have sufficient solvency to pay out claims. At the heart of Solvency II lies the Own Risk and Solvency Assessment (ORSA) that prescribes the use scenarios for self- assessments and links risk management to the strategy of the insurer to make firms more resilient. ORSA scenarios can

be approached as another regulatory requirement which just entails a yearly report,

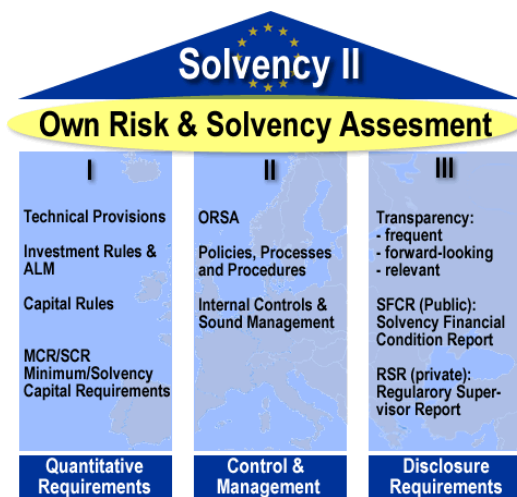


company.”⁶

but it can also be grasped as an opportunity to improve strategy and to “provide impulses for the reorientation of the entire

Which scenarios?

Europe’s Insurance Watchdog EIOPA outlined several standard scenarios that can be used in the ORSA assesment. However, the EIOPA scenarios resemble historical crises too much and hence do not prepare for future risks.⁷ Firms can draw up their own company specific scenarios and consider all kinds of potential risks, put mechanisms for the monitoring of risk factors in place (early warning signals), and create real call and put options for each scenario.



Regulatory Nuisance vs. Growth Opportunity

Even though ORSA is primarily intended to be a management tool, it can easily be perceived as another regulatory annoyance by insurers. According to a CFSI/PwC survey, regulation is the top risk facing the insurance industry before investment performance, and macro-economic trends.⁸ Some insurers worry about

the cost of the ORSA process. They think that these costs will have to be paid either directly by the firm or its policyholders in the form of higher prices or indirectly through less complex and thus comprehensive products.⁹ Others fear it will throw the insurance and pension industry into even more turmoil than it is already. MPs in Britain have described ORSA as “an object lesson in how not to make law.”¹⁰

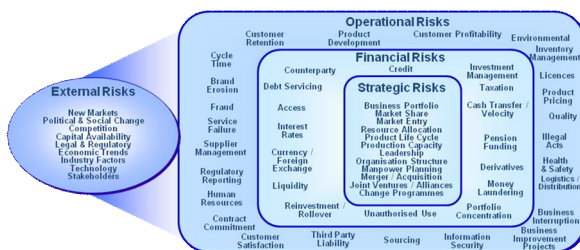
Nevertheless, ORSA’s regulatory requirements can actually provide unique opportunities for growth and innovation. Currently, short-term risk factors, hazards and financial risks receive more executive attention than far-reaching threats and opportunities. But it has been proved that operational and strategic risk can make up to 90 percent of the drops in shareholder value and that these risks “could have been anticipated and handled by known risk management practices, tools and techniques.”¹¹ ORSA puts those risks that greatly affect the company back on the management agenda, where they receive the importance they deserve and improving business in the long run. As Munich Re has also argued: in ORSA “increased regulatory and operational requirements can exert constructive pressure on business model innovation.”¹²

Linking strategy with ORSA

Strategy and ORSA can be closely connected processes. Which scenarios might influence the success of your strategy and which strategy does your company have to deal with in certain scenarios? Scenarios can influence your company’s mission (what do we stand for and what do we do?) and vision (what do we want to achieve?) as well as a the roadmap to realize the vision (see figure below).

Since the future is inherently uncertain, the exploration of different scenarios is required by Solvency II to chart different possible futures. Scenarios help to develop dynamic strategy or roadmaps, with different options for each scenario and ways to monitor the environment to assess which scenario is developing. On the basis of strategy a risk profile can be determined and risks quantified. All of which are shown in the annual ORSA reports.

If ORSA is adopted as an ongoing process, it ensures strategic versatility to get the highest priority. Research by the Dutch Bank (DNB) showed that significant market players consider strategic versatility amongst the top-three strategic competences for insurance companies, together with consumer orientation and digital capabilities.¹³ Business models have to be changeable to new events and changing environments. However, in reality insurance companies often do not realize that risk strategy encompasses more than ensuring the company has sufficient capital to satisfy solvency requirements.¹⁴ Scenario analysis and planning, famously used by Royal Dutch/Shell to increase profits exponentially, should be a fundamental part of ORSA, and a “powerful tool”¹⁵ to enhance risk identification because it takes a holistic view of risks.



The interconnectedness of risks

Scenarios help to identify external risks, which in turn can lead to operational, financial and strategic risks (see model above). Next to an external focus, scenarios help to understand

the possible interconnectedness of risks. For example during the housing crisis, the operational risk manager could have calculated the combined probability of three risks arising together such as customers not paying (10%), loans that are not being refinanced (10%), and an increase in interest rates (10%), is just one in a thousand (10% x 10% x 10 %), assuming these risks to be unrelated. Scenarios, by their inherent narrative structure, make it visible that it is possible for these risks to happen all at the same time, where each risk actually increases the probability of the other one to occur.

Many risk calculations and models provide no adequate basis for the ORSA, because of their three underlying assumptions that do not automatically apply to strategic risk assessment. Firstly, an event needs to have happened often enough in the past to adequately predict future occurrence. Although insurance firms can calculate the probability of defaulting debtors, they do not have sufficient statistics to calculate the risk of a cyber-attack or natural disaster to occur. Secondly, risk management functions on the assumption of *ceteris paribus*, that the other circumstances remain unchanged and thus have no affect on the model. In reality political, technological and environmental contexts change so rapidly that they should be reflected in the model; when the operational context changes, the strategy should change as well. Thirdly, the *statistical independence of risk factors* assumed by day to day risk management has no bearing on reality when considering the longer term strategic uncertainties. Risks such as the number of defaults and the impossibility to refinance loans could in fact be connected. To attain ORSA’s aim to protect policyholders through enhancing risk assessment, insurance firms need to adapt their strategic process to the

realization that risks can be caused by a multitude of interconnected factors.

The power of scenarios

When firms expand their view through scenarios to see the interconnectivity of risks, they gain a competitive advantage. De Ruijter Strategy has helped organizations such as the Ministry of Defense, Rabobank and the Dutch Association of Insurers to benefit in uncertain times through the application of scenario based strategy. De Ruijter Strategy developed its expertise at the Shell group, who pioneered with the use of scenarios in risk management during the oil crisis of the 1970s. The oil crisis eventually resulted in the housing crisis of 1978. The Yom Kippur war of 1973 caused an explosion of oil prices, resulting in stark inflation rates and soaring interest rates. Many organizations were unprepared and suffered losses as a consequence. Because Shell had considered this scenario and its implications ahead of time, the organisation was ready to adapt when crises happened and they profited where others lost. Similarly Rabobank sailed smoother through the 2008 credit crunch because it had already carefully considered a scenario with a steep decline of interest rates. ORSA provides insurance firms with "an integrated view of the risk and business strategies, which enables an insurer to organize, adapt and enhance its structures and processes accordingly."¹⁶ ORSA enables firms to profit, or at least hold a steady course in volatile times, by obliging them to look ahead.

Quantitative vs. Qualitative Risk Management

In the past, insurance firms mainly relied on quantitative methods to determine risk strategies, even though hard probabilities can often not be assigned to strategic risks. Such methods are blind to interconnectivity, context dependent and hard to predict, as

outlined above. As professors Allan and Beer have pointed out, "the main limitation of existing methods is that they are not designed to encompass qualitative judgments. Yet managers faced with complex situations are often forced to rely on judgment when quantitative models fail to make sense of complex interactions."¹⁷ Strategic risk management requires an approach that combines qualitative and quantitative methods, as prescribed by pillars 1 and 2 in Solvency II.

While computers know how the math works and do it faster, organisational leadership can provide essential qualitative foresight. Scenarios incorporate intuitive wisdom into the risk management process. Scenarios are plausible, consistent and coherent stories of the future that show how relevant forces interact in the external environment, enabling companies to think through different possible futures and to best prepare themselves by taking informed decisions in the present. Scenario thinking improves risk management for four reasons:¹⁸ Firstly, scenarios effectively question and disconnect current managers' mental models and their biases that obstruct risk perception. Secondly, scenarios give systemic insight by offering a way to map relations between risks and events into a coherent whole. In the third place, scenarios bring into view those areas of the risk landscape into which organisations might expand, and that require further research accordingly. Finally, in scenario thinking 'wild cards' or unknowables can become part of the risk profile through broadening the mind of organizational members.

Thinking fast, and slow

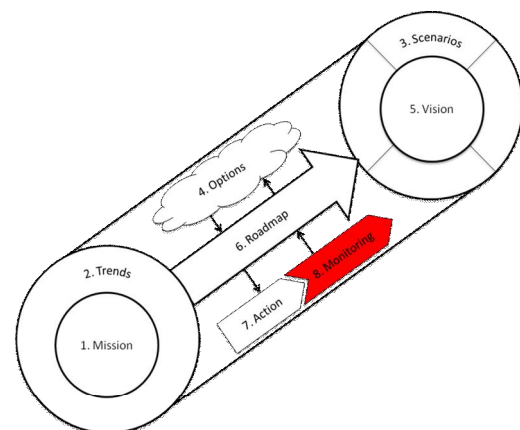
Combining quantitative and qualitative methods, scenario thinking combines the two systems of thought which are equally involved in decision-making as outlined by Kahneman.

Quantitative methods favour what Kahneman calls *system 2 thinking*, which is slow, deliberate, effortful thinking that requires attention.¹⁹ Especially in strategy and risk management, the function of *system 1*, the intuitive, associative, metaphorical, automatic, impressionistic way of thinking that is often “the secret author of many of the choices and judgments” we make, is also needed. System 1-thinking of executives has high value in the strategy and risk management process, and should be combined with the slower system 2 quantitative methods. Chess players, anaesthesiologist, or lawyers who have had over 10,000 hours of training in decision making and who have thoroughly developed their intuition can effectively leverage their system 1 thinking and make important decisions in the blink of an eye. A chess master can walk by a chess board on his way to lunch and identify the right moves. Similarly, senior managers can use their training with real-world experiences to make strategic decisions. Scenarios merely provide the instrument to leverage this way of thinking, to “re-perceive” situations, connect the dots and make informed decisions about the future. Scenarios give firms “a means to discern importance and relevance in events in the world.”²⁰

Monitoring risk: Early Warning Signal System

On the basis of the qualitative thinking of the scenario process, quantitative methods can be reintroduced into the process. On the basis of scenarios, firms can decide what calculations to make and what questions to ask about e.g. proper structure and business models, the protection of systems against failure, and the gathering of expertise. Firms can also use quantitative methods to specify which factors are indicators or warning signals for an impending crisis, scenario or opportunity. Monitoring these signals can lead to the early recognition of business opportunities. It also

integrates ORSA into the firm’s strategic decision-making and thereby prevents it from becoming a regulatory nuisance. Those firms that, before the credit crisis, considered gloomy scenarios such as a crash of the housing market, could monitor risk factors such as inflation, housing prices and interest rates and step out of risky portfolios on time, emerging from the crisis without major damage. As we saw above, Rabobank considered different interest rate scenarios in 2003, then when interest rates changed rapidly between 2004 and 2006 (early warning signal) they were able to take the appropriate action to deal with a potential credit crisis. Similarly Shell monitored oil prices and its driving forces, and moved quickly to take appropriate actions once they saw the corresponding scenario materialize.



Determining which scenario is materializing is done through an early warning signal system, which systematically looks ahead. On the basis of indicators the firm’s roadmap can be adjusted and different actions taken. Involving members from all levels of the organization in this process, through educating them on the newly developed scenarios and assigning them an active role in monitoring the environment, leverages the law of large numbers and creates a broad base of data that can be used to develop business strategy.

ORSA Scenario Requirements

Solvency II, of which ORSA is part, explicitly prescribes a combination of quantitative and qualitative risk management. Munich Re calls for “the incorporation of an effective and efficient ‘review-preview scenario thought process’ into the cooperation between the board and the strategy planning, financial control and risk management functions.”²¹

DNB has already developed best practices for the use of scenarios in the ORSA process following the Solvency II pilot.²² The Dutch Association of Insurers has furthermore published a guide of ORSA Good Practices.²³

Best practices of ORSA

To be effective ORSA should be an (1) **ongoing process** that takes place on different levels with different frequencies, not a yearly exercise. It is part of the *Corporate Planning Process* and should elicit constant management decision and actions and the developments of the risk profile and its relationship to the scenarios should be constantly monitored. Such processes can easily be integrated into elements and systems that already exist.

ORSA is a (2) **management tool** rather than a yearly reporting exercise, which should constantly elicit responses and support strategic decision-making. As outlined above, ORSA’s added value lies in that it combines qualitative and quantitative risk management, and links the strategy to the risk analyst’s perspective.

Furthermore, the ORSA is not based on “one-model-fits-all,” but is (3) **company specific**. Although a standard model for the calculation of the SCR (Solvency Capital Requirement) is available, under ORSA firms can make calculations tailored to the firm’s unique risk profile. After all, who is more capable of assessing the firm’s risks than its board? The

ORSA also provides an opportunity for firms to take further ownership of their risk assessment and tolerance. There are few requirements regarding the number of, types of and amount of stress in the scenarios. They are all dependent on the firm’s unique risk profile. The only requirement is that scenarios are chosen that show the consequences of a strategic course on the firm’s capital position.

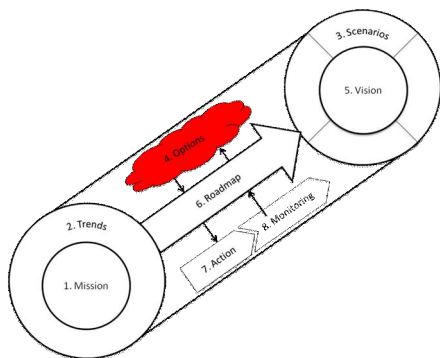
Additionally, the ORSA is fundamentally (4) **forward-looking**. A typical ORSA looks ahead at least three to five years. The new rules require insurers to use future developments, new business strategies and catastrophic events in their calculations, and not just historical data. Quantitative methods, such as the SCR calculation, just span one year, while the ORSA spans more. The goal is to ensure that insurers have sufficient capital in both worst- and best-case scenarios.²⁴

Lastly, ORSA requires an (5) **identification and assessment of all risks appropriately evidenced**, not just of liabilities, but also of the asset-side of risk-taking, resulting in a total balance sheet with all risks and their interactions. Both the risks used to calculate the SCR as well as those not used in that process need to be analyzed. Capital must be held against these different forms of insurance, market, credit, counterparty, strategic, reputational, liquidity and operational risks. In order to benefit truly from ORSA, a company should consider the full width of sensitivities of all risks and their interconnectivity. Every potential risk, both on micro and macro level, that might influence the firm has to be used in the scenario analysis.²⁵

ORSA scenarios and real options

Contrary to popular opinion, ORSA scenarios do not necessarily create a definite need to acquire more capital. Although, under ORSA

higher risks might translate into a higher SCR (Solvency Capital Requirement), management and supervisory authorities could develop a range of real options beyond simple capital increase to reduce risks to acceptable levels. Where scenarios help to identify and assess risks, real options theory helps to quantify residual risks and provides ways for the firm to formulate tangible measurements to minimize potential downside and even maximize potential upside. Real options are measures that can be executed under predefined scenarios.²⁶ Every scenario requires its own amount of capital that must be held to ensure its solvency, but with the right set of real options this amount can be reduced. By linking the ORSA scenarios to real options theory, the whole process becomes integrated in the firm's strategy. The real options are incorporated into the roadmap related to possibly materialising risks, monitored by the Early Warning System.



Risks as articulated in the ORSA scenarios can be dealt with in four different ways. Firstly, the firm can *bear* the risk, which requires sufficient capital as a backup. Secondly, the firm can *transfer* the risk by selling it through financial hedging, leaving the financial impact for someone else to deal with. Thirdly, the firm can *treat* the risk by lowering the impact or turnaround through operational hedging. Firms can spread risks by identifying risks that are inversely correlated. If the risk goes up, what goes down? An example of this is smart

diversification through creation or expansion of branch networks, (re)allocating portfolios to take advantage of economies of scale, innovating in sectors that work as an operational hedge. In the fourth place, risks can be *terminated* by creating and exercising put options. The use of strategic thinking and scenario planning helps to get all options on the table and allows firms to take informed decisions on how to move forward.

Final thoughts

In conclusion, the ORSA offers insurance firms opportunities for growth, by requiring them to enhance their risk management methods. Scenario based strategy is a way to understand risk taking from an integrated perspective, and combine quantitative and qualitative approaches. Stress testing such as currently required by EIOPA offers one way to look at the future, ORSA scenarios map out even more possible futures on the basis of which a risk strategy can be formulated, specific to each firm's unique circumstances. It is up to firms to recognize ORSA for its true value in "enabling business objectives to be achieved that are aligned with the company's risk-bearing capacity and risk appetite."²⁷ ORSA puts strategic thinking back on the agenda of the insurers' decision-making process. ORSA provides insurance firms with the opportunity to realize that scenario based strategy is essential to navigating an uncertain future and determines which firms will make it through turbulent times, and which will not.

¹ Paul de Ruijter. "Scenario's verbanden". *FD Outlook*, September 2012

² Taleb, Nassim Nicholas. *The black swan: the impact of the highly improbable*. 1st ed. New York: Random House, 2007.

³ Van der Heijden, Kees, Ron Bradfield, George Burt, George Cairns, en George Wright. *The sixth sense: Accelerating organizational learning with scenarios*. John Wiley & Sons, 2009; Andersen, Torben Juul. *Strategic risk management practice: how to deal effectively with major corporate exposures*. Cambridge, UK ; New York: Cambridge University Press, 2010.

⁴ "sudden and unique incidents that can constitute turning points in the evolution of a certain trend or system" Mendonça, Sandro, Miguel Pina e Cunha, Jari Kaivo-oja, en Frank Ruff. "Wild Cards, Weak Signals and Organizational Improvisation". *Futures* 36, nr. 2 (March 2004).

⁵ Small firms with a premium annual income less than 5 million, regardless of their legal form, are not required to comply, but can opt in. Solvency II does not apply to pension funds, which are instead covered by directive 2003/41/EEC.

⁶ Ibid. p1.

⁷ Steinhauser, Gabriele. "EU bank stress-test scenarios for 2014 released - MarketWatch". *Marketwatch*, 29 April 2014.

⁸ Center for the Study of Financial Innovation, en PricewaterhouseCooper. *Insurance Banana Skins 2013*. Center for the Study of Financial Innovation, 2013.

⁹ Economist Intelligence Unit. *Insurers and society: How regulation affects the insurance industry's ability to fulfil its role*. Economist Intelligence Unit, 2012.

¹⁰ Treasury Committee. "Solvency II is 'an object lesson in how not to make law', says Tyrie". *News from Parliament - UK Parliament*, 30 April 2013.

¹¹ Andersen, Torben Juul. *Strategic risk management practice: how to deal effectively with major corporate exposures*. Cambridge, UK ; New York: Cambridge University Press, 2010.

¹² Jürgen Dümont en Thomas Schaffrath-Chanson, *From strategic risk to risk strategy - Insurance scenarios for risk identification and business model innovation* (Munich RE, February 2013), p1.

¹³ De Boer, Leo, en Fred Treur. "Tien transformaties verzekeringsector: innovatieparadox". *Verbond van Verzekeraars*, januari 2014.

¹⁴ Jürgen Dümont en Thomas Schaffrath-Chanson, *From strategic risk to risk strategy - Insurance*

scenarios for risk identification and business model innovation, Solvency Consulting Knowledge series (Munich RE, February 2013), p5.

¹⁵ ORSA Working Group of the Dutch Association of Insurers. *Vision on Own Risk and Solvency Assessment (ORSA) Good Practice*. Dutch Association of Insurers (Verbond van Verzekeraars), februari 2012.

¹⁶ Jürgen Dümont en Thomas Schaffrath-Chanson, *From strategic risk to risk strategy - Insurance scenarios for risk identification and business model innovation* (Munich RE, February 2013), p1.

¹⁷ Allan, Neil, and Louise Beer. "Strategic Risk: It's all in your head." *University of Bath School of Management Working Paper Series, Claverton Down, Bath, UK* (2006).

¹⁸ Jeroen de Groot, A model to identify and manage strategic risk, masters thesis UvA, 2013

¹⁹ Daniel Kahneman, *Thinking, fast and slow*, 1st pbk. ed (New York: Farrar, Straus and Giroux, 2013).

²⁰ Alexander Fink, Philip Hadridge, en Gill Ringland, "From signals to decisions", in *Scenarios for success: turning insights into action*, edited by Bill Sharpe en Kees Van der Heijden (Hoboken, NJ: Wiley, 2007).

²¹ Jürgen Dümont en Thomas Schaffrath-Chanson, *From strategic risk to risk strategy - Insurance scenarios for risk identification and business model innovation* (Munich RE, februari 2013), p3.

²² De Nederlandse Bank, *Solvency II ORSA oefening 2012 FAQ* (De Nederlandse Bank, 2012).

²³ ORSA Working Group of the Dutch Association of Insurers, *Vision on Own Risk and Solvency Assessment (ORSA) Good Practice* (Dutch Association of Insurers (Verbond van Verzekeraars), February 2012).

²⁴ Ibid.

²⁵ De Nederlandse Bank, *Solvency II ORSA oefening 2012 FAQ* (De Nederlandse Bank, 2012).

²⁶ Andersen and Schrøder, 2010 p. 81, cited in Jeroen de Groot, A model to identify and manage strategic risk, masters thesis UvA, 2013, p 43.

²⁷ Ibid.