

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



Innovating Risk Management through Scenario Planning

# Navigating the Future through ORSA Scenarios

The European rules for insurance risk management are out of date; they could not weather the financial crisis. The newest EU directive, Solvency II (SII), aims to improve insurer’s risk assessment by obliging insurance firms starting 2016 to assess their solvency needs through their Own Risk and Solvency Assessment (ORSA), in which scenario planning plays an important role. The umpteenth regulatory nuisance, critics say. However, De Ruijter Strategy knows from years of experience with scenario planning, as well as working with the Dutch Association of Insurers and Nyenrode Business Universiteit, that the ORSA provides a unique opportunity for growth. Provided the ORSA is integrated as a management tool into the firm’s strategic decision-making processes. Insurers must seize ORSA as an opportunity to make scenario-based, future-oriented thinking the basis of the strategy for success of its firm. Looking ahead is no longer a mere a nice-to-have, but a must-have to successfully navigate the future of insurance.

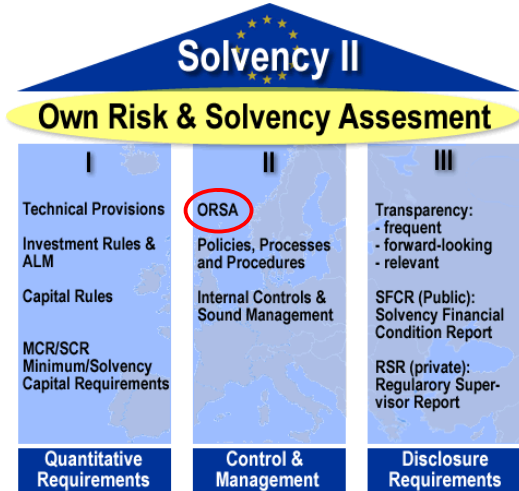
### Solvency II Explained

On March 12<sup>th</sup> the European Parliament adopted Omnibus II, staying on track for the SII directive to take effect on January 1<sup>st</sup> 2016. It’s main aim is to protect policyholders, but also to boost levels of trust in the European financial sector by ensuring insurers have sufficient solvency to pay out claims as well as for regulatory bodies to have greater understanding of what firms are doing, and the opportunity to step in on time. At the heart of Solvency II, lies the ORSA which uses scenario planning to make firms more resilient and better risk takers. On April 29<sup>th</sup> Europe’s Insurance Watchdog EIOPA outlined different economic and financial scenarios that insurance firms must be able to weather in stress testing. The adverse scenario includes a two-year recession, with a shrinking of 0.7% this year, 1.5% the next and almost no growth in 2016.

But there are many more possible scenario’s; deflation in the eurozone leading to lower consumer prices was not included, and the scenario’s resemble past crises and does not prepare for future risks such as the Russians stopping to provide gas to the EU.<sup>1</sup> However, in the ORSA firms can draw up their own scenarios and use this opportunity to consider

all kinds of potential risks, put mechanisms for the monitoring of risk factors in place (early warning scenarios), and create real call and put options for each scenario.

ORSA is both for internal and external use. On the one hand ORSA serves as the firm’s **internal assessment procedure**, embedded in the strategic decision making process, to identify whether their risk profile deviates from the assumptions underlying their regulatory capital calculation. On the other hand, ORSA serves as a **supervisory tool** for authorities which must be informed of ORSA’s results. Although ORSA is allocated to the SII pillar of control and management, it also plays a role in the quantitative calculations of and reporting requirements.



Almost all European insurers and reinsurers are required to comply with Solvency II.<sup>3</sup> SII follows similar regulation enacted in the USA by the NAIC and worldwide by the IAIS. Although the full quantitative, qualitative and supervisory reporting and disclosure of information regulations are still being developed, it is already possible to assess the value of ORSA and how firms can reap its benefits and use it as an impulse for growth and innovation. Whether the ORSA is approached as another regulatory requirement which just entails a yearly report, or as a management tool integrated into an extended risk culture, it can also “provide impulses for the reorientation of the whole company.”<sup>2</sup>

### 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.<sup>3</sup> Some insurers worry about the bill of the ORSA process. They think that the bill will need to be paid either directly by the firm or its policyholders in the form of higher prices or indirectly through less comprehensive products.<sup>4</sup> Others fear it will throw 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.”<sup>5</sup>

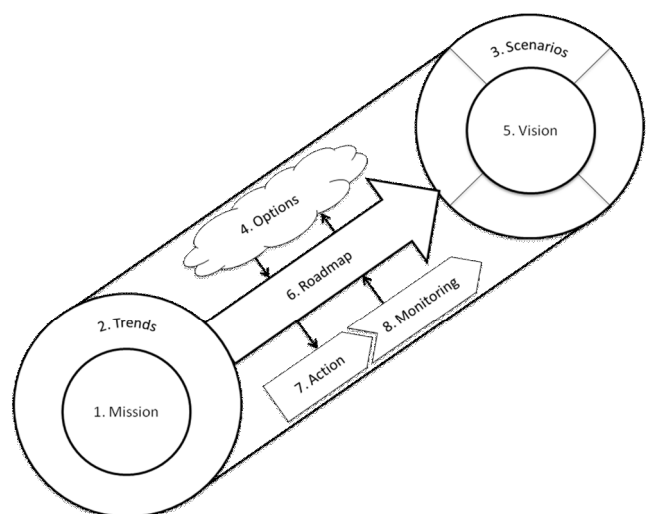
However, ORSA’s regulatory requirements can actually provide unique opportunities for growth and innovation. Currently short-term

<sup>a</sup> 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.

risk factors, hazards and financial risks receive more executive attention than far-reaching threats and opportunities. But it has been proven 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.”<sup>6</sup> ORSA puts those risks that most greatly affect the company back on the management agenda, receiving 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.”<sup>7</sup>

### Strategic Versatility

Strategy lies at the core of the ORSA process; it determines the firms mission (what do we stand for and what do we do?) and vision (what do we want to achieve?) as well as a roadmap to creating this vision which incorporates a risk strategy and risk appetite (see figure below). Since the future is inherently uncertain, different scenarios are created to chart different possible futures. Then a roadmap is created, with different options for each scenario and ways of monitoring which scenario is developing. On



De Ruijter's model for Scenario based Strategy



the basis of its strategy a risk profile can be determined, risks quantified, which is shown in the quarterly and annual ORSA reports.

If ORSA is adopted as an ongoing-process and management tool, it ensures that strategic versatility gets the highest priority. Research by the Dutch Bank (DNB) showed that the significant market players consider strategic versatility amongst the top-three strategic competences for insurance companies, together with consumer orientation and digital capabilities.<sup>8</sup> 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.<sup>9</sup> Scenario analysis and planning, famously used by Royal Dutch/Shell to increase profits exponentially, is a fundamental part of ORSA, and a “powerful tool”<sup>10</sup> to enhance risk identification because it takes holistic view of risks.

### Past risks are no guide to the future<sup>11</sup>

One limitation of current risk management practices is that models of the future are often based on historic empirical data. The financial crisis of 2008 showed us how past results are no indications of 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 obligations 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 worse mortgages, was discounted. 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 based to black swans,<sup>12</sup> “unknowables,”<sup>13</sup> or wild cards,<sup>14</sup> unexpected events of large significance such as the invention of the internet and the impact of 9/11. Through scenario planning firms can put risks back on their radar and estimate them for what they are worth, thus profiting in times of crisis.

### The interconnectedness of risks

Besides underestimating the impact of risks by basing their probable impact on empirical data, firms also ignore the fact that seemingly



Interconnectedness of Risks

different risks are in fact interdependent. For example during the housing crisis, the operational manager would calculate the probability of three risks would arise together such as customers not paying (10%), loans that are not being refinanced (10%), and increase in interest rates (10%), is just one in a thousand (10% x 10% x 10 %). In strategic planning external and rare risks over which firms exert no influence are considered for which simple operational calculations do not work. Risks can only be calculated in this way for internal risks that arise with a high frequency, such as absence through illness, debtors that fail to pay and defect machines.

Operational risk calculations and models are no adequate basis for the ORSA, because of its three underlying assumptions that do not automatically apply to strategic risk assessment. First, an event needs to have happened often enough in the past to adequately predict future occurrence. Although insurance firms can calculate the probability of debtors that do not pay, they do not have sufficient statistics to calculate the risk of a cyber-attack or natural disaster. Secondly, operational 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 must change as well. Third, the **statistical independence of risk factors** assumed by operational risk management has no reality. Risks such as the number of defaulters and the impossibility to refinance loans are in fact dependent. To attain ORSA's aim to protect policy holders through enhancing risk assessment, insurance firms need to adapt their strategic process to the realization that

risks are caused by a multitude of interconnected factors (see diagram next page).

### The power of scenarios

When firms expand their view through scenario planning to see the connectivity of risks, they gain a competitive advantage. De Ruijter Strategy has helped organizations such as the ministry of Defense, the Rabobank and Dutch Association of Insurers to profit in uncertain times through scenario based planning. De Ruijter Strategy developed its expertise at the Shell group, who pioneered risk management through scenarios during the oil crisis of the nineteen seventies which eventually resulted in the housing crisis of 1978. The war of 1973 caused an explosion of oil prices, resulting in stark inflation rates. Interest rates soared and many organizations were unprepared and suffered losses as a consequence. Because Shell had considered this scenario and its uncertainties ahead of time, it was ready to adapt when crises happened and they profited where others lost. Similarly the Rabobank sailed smoother through the 2008 credit crunch because it had already carefully considered a scenario with a steep decline of interest. 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."<sup>15</sup> 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

Currently, insurance firms mainly rely on quantitative methods to determine risk strategies, even though strategic risk can often not be assigned probabilities. Even if this can be done, such methods are blind to the interconnectedness, 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.”<sup>16</sup> Strategic risk requires an approach that combines qualitative and quantitative methods.

While computers know how the math works and do it faster, the managers have essential qualitative foresight. Scenarios incorporate the intuitive wisdom of the manager 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 about different futures and how they can best prepare themselves through informed decisions in the present. Scenario thinking improves risk management for four reasons:<sup>17</sup> First, scenarios effectively question and disconnect current manager’s mental models and their biases that prevent risk perceptions. Second, scenarios offer systemic insight by offering a way to map the interrelatedness of risks and events into a coherent whole. Third, scenarios bring into view those areas of the risk landscape into which the firm can expand, and that thus require further research. Fourth, 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

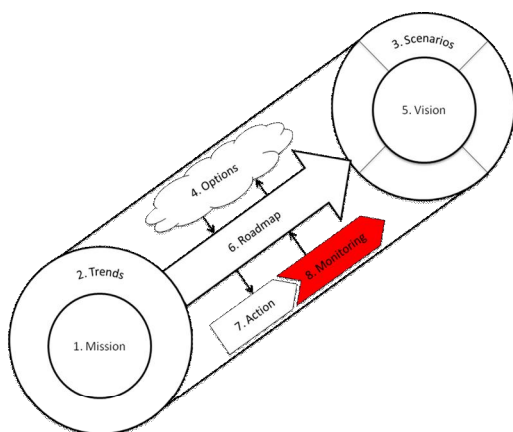
Combining quantitative and qualitative methods, Scenario thinking combines the two systems of thought which are equally involved in decision-making as famously outlined by Nobel prize-winning psychologist Daniel

Kahneman. Quantitative methods which are now relied on heavily favour, what Kahneman calls *system 2 thinking*: which is slow, deliberate, effortful thinking that requires attention.<sup>18</sup> Especially in 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 ignored. Yet the system 1-thinking of managers has high value in the risk management process, and should be combined with, rather than excluded from current quantitative methods. Chess players, anaesthesiologist, or lawyers that have had over 10,000 hours of training making decisions and 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 mere act as instruments 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.”<sup>19</sup>

### 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 to ask questions about e.g. proper structure and business model, protection systems against failure, and gathering of expertise. Firms can also use quantitative methods to specify the factors that are indicators or warning signs 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 the Rabobank considered a scenario with a decline interest rates, then when interest rates declined (early warning signal) they were able to take the right action. Similarly Shell monitored oil prices and inflation, 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 indicators, the roadmap can be adjusted and different actions taken. Involving members from all levels of the organization in this process, by 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 this combination of quantitative and qualitative risk management, “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.”<sup>20</sup> Although the full quantitative, qualitative and supervisory reporting and disclosure of information regulations are still being developed, the DNB has already developed best practices for the use of scenarios in the ORSA process following the Solvency II pilot.<sup>21</sup> The Dutch Association of Insurers has furthermore published a guide of ORSA Good practices.<sup>22</sup>

### 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 “Medium Term 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 benefit is that it combines qualitative and quantitative risk management, and links the management and risk analyst 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 develop and apply a full or partial internal model tailored

to the firm's unique risk profile. This makes solvency requirements more reflective of actual risks, since a simple firm does not have the same kind of systems and controls as a multinational firm. After all, who is more capable of assessing the firm's risks than its management? Thus internal models become more accurate, innovating risk management and monitoring through ORSA. The custom model also provides an opportunity for firms to take further ownership of their risk assessment and tolerance. There are few requirements regarding the number, types, and amount of stress of the scenarios. They are all dependent on the firm's unique risk profile. The only requirement is that scenarios are chosen to show the consequences of a strategic course on the firm's capital position. Furthermore scenarios have to test recognized sensitivities of the risk profile to a (negative) impact on the firm's capital position. Insurers are free to choose the correlation between scenarios.

Because the nature, scale and complexity of the ORSA process are proportionate to the size and risk appetite of insurers, it is not unduly burdensome to smaller firms. The regulators evaluate the scenario process primarily on the plausibility of the chosen scenarios and the correct execution of the scenario process, rather than on its results in decision-making processes.

Additionally, the ORSA is fundamentally (4) **forward-looking**. A typical ORSA looks ahead to at least three to five years. The new rules require insurers to use future developments, new business strategies, and catastrophic events, and not just historical data in their calculations. Quantitative methods, such as the SCR calculation just spans one year, while the ORSA spans more. The goal is to ensure that insurers have sufficient capital in both worst-case and best-case scenarios.<sup>23</sup>

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 risk. The basic principle of scenario analysis is that the full width of sensitivity of risks, and their interconnectedness is assessed. Every potential risk, both on the micro- and macro level, that influences the firm has to be used in the scenario analysis.<sup>24</sup>

#### **Pioneering ORSA**

Although the DNB has laid out rough standards or good practices for ORSA, it will not prescribe specific macro-economic scenarios. Instead it shall only assess the plausibility and completeness and of the process. The DNB leaves room for the Dutch Association of Insurers to pioneer this field and standardize scenario planning or develop tools and guidelines. One example in which DNB has already done this is by creating a common correlation matrix for certain risks, so that firms do not have to determine those on their own. Such a matrix shows the interconnectedness of risk, which is even higher in times of volatile times. During crises the correlation between house prices and share prices on the stock market become connected risks, whereas they are not in a normal scenario. The Good Practice guide of the Dutch Association of Insurers is just the beginning of this opportunity for growth to establish itself as an authority on ORSA, perhaps even as a connector or database through which various ORSA scenarios can be shared between insurers.



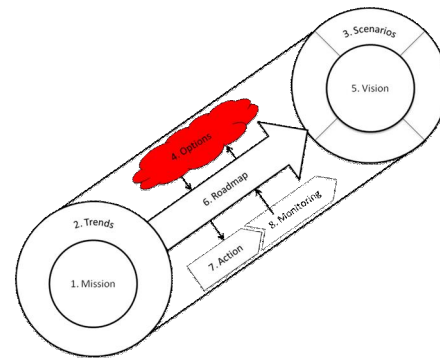
### Solving the Innovation-paradox

Through ORSA scenarios the innovation-paradox<sup>25</sup> is solved; innovation and the adoption of large amount of new regulation are no longer mutually exclusive processes but enhance each other instead. By forcing firms to think about their future, innovative processes such as product development and search for new markets are put back on the agenda in response to strategic sessions in which risks are inventoried and responses are formulated. Tax regulators and authorities can now contribute to innovation by making insurers aware of their risks and requiring them to create adequate buffers to protect themselves against such risks, safeguarding their promises to the insured. In response they can either spread or cover their risks of their products and shall be able to weather storms such as financial crisis and natural disasters.

### ORSA Options

Contrary to popular opinion, ORSA planning does not create a definite need to acquire more capital. Although under ORSA higher risks translate into a higher SCR (Solvency Capital Requirement), management and supervisory authorities have a range of options to bring risk back to acceptable levels beyond a simple capital increase. Whereas scenarios create qualitative options, formulating real options quantifies those risks and provides tangible ways for the firm to formulate tangible steps based on the outcomes of the scenario planning process. Real options are business opportunities that can be executed under the right circumstances, and left alone under unfavourable circumstances.<sup>26</sup> Every scenario requires its own amount of capital that must be held to ensure its solvency. Furthermore, different options can be created for each scenario, and they can be incorporated into the roadmap once the risks are materializing,

monitored by the Early Warning Signal System.



Risks can be dealt with in four different ways. First, the firm can *take* the risk, which requires sufficient capital as a backup. Second, the firm can *transfer* the risk, selling its risk through financial hedging, leaving the risk for someone else to deal with. Transferring risk can be done through call options; acquiring assets under future circumstances for a predetermined price. Other examples are transferring risks through reinsurance and co-insurance as well as divesting themselves of risk generating activity through put options (divesting assets at a predetermined price). Third, the firm can *treat* the risk, through operational hedging the impact or turnaround of the risk is lowered. Firms can spread risk by identifying the risk that is inversely correlated, if the risk goes up, what goes down? An example is smart diversification through creation or expansion of branch networks, movements of portfolios to take advantage of economies of scale, innovating in sectors that work as an operational hedge. Fourth, risks can be *terminated* by creating put options. Through strategic thinking and scenario planning, risk management discussions put all options on the table and let firms take an informed decision on how to move forward.

The options generated through ORSA scenario planning have important advantages for both large and small companies. Larger firms

benefit from their extensive ability to diversify and to spread their risks through a broad investment policy, different products and international presence. Small and medium-sized companies (SMEs – roughly 15% of EU market share and 80% of the number of companies) cannot diversify to the same extent, but they also do not have the risk of complexity and size. Furthermore, they can specialize as well as know their clients better, enabling them to better estimate claim risks. They can then use this information to develop their customized risk profile.

#### **Using ORSA to increase support base**

Although the ORSA report is required to be shared only with supervisors and the appropriate regulators, further benefits can be reaped from the ORSA process by sharing results with other parties such as shareholders. Firms that understand the benefits of ORSA do not just make yearly reports that are shared with the regulator and supervisors, but also make quarterly lean ORSA reports that are shared with risk committees, investment committees and management at all levels of the organization. Risk strategies should not only serve legal reporting requirements, but should be aimed at the companies' objectives which are largely based on the expectations of its main stakeholders.<sup>27</sup> Firms can use the strategy and risk-profile determined by ORSA to make more effective decisions in alignment with these objectives set by stakeholders, not just basing strategy on risks and profits. By regularly reporting back on results to its internal stakeholders through ORSA reports, inform them that their expectations such as appropriate pricing of products, solvency, and reliable return on investment, are being met and increase the firm's support-basis. In this way, ORSA links between risk identification, assessment, capital budgeting and strategic planning are continually strengthened.

Moreover, ORSA reports can be shared with external shareholders to create broader understanding and support of their business. In a time where public trust in the financial sector is at an all-time low, firms can use their ORSA reports to show their strategies for risk-management. Evidence of proactive risk management processes, increases the firm's support base and can give firms a competitive advantage.

#### **Final thoughts**

In conclusion, the ORSA offers insurance firms opportunities for growth, by requiring them to enhance their risk management methods. Scenario planning is a way to understand risk taking as a whole system, and combine quantitative and qualitative approaches. Stress testing such as now 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. However, the lack of strict regulations and clear guidelines leave firms free to approach ORSA as a regulatory exercise as an aim in itself. It is up to the firms to recognize ORSA for its true value to "enable business objectives to be achieved that are aligned with the company's risk-bearing capacity and risk appetite."<sup>28</sup> ORSA puts strategic thinking back on the agenda of the insurers' decision-making process. At De Ruijter Strategy, we already know through years of experience that scenarios are not just a nice-to-have. ORSA is an opportunity for insurance firms to realize that scenario based strategic planning is essential to navigating the future and determines which firms will make it through financially turbulent times, and which will not.

## Colofon



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<sup>3</sup> Center for the Study of Financial Innovation, en PricewaterhouseCooper. *Insurance Banana Skins 2013*. Center for the Study of Financial Innovation, 2013.

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<sup>6</sup> Andersen, Torben Juul. *Strategic risk management practice: how to deal effectively with major corporate exposures*. Cambridge, UK ; New York: Cambridge University Press, 2010.

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<sup>8</sup> De Boer, Leo, en Fred Treur. "Tien transformaties verzekeringssector: innovatieparadox". *Verbond van Verzekeraars*, januari 2014.

<sup>9</sup> 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.

<sup>10</sup> 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.

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<sup>16</sup> 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).

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<sup>18</sup> Daniel Kahneman, *Thinking, fast and slow*, 1st pbk. ed (New York: Farrar, Straus and Giroux, 2013).

<sup>19</sup> 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 (Chichester, England ; Hoboken, NJ: Wiley, 2007).

<sup>20</sup> 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), p3.

<sup>21</sup> De Nederlandse Bank, *Solvency II ORSA oefening 2012 FAQ* (De Nederlandse Bank, 2012).

<sup>22</sup> 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).

<sup>23</sup> Ibid.

<sup>24</sup> De Nederlandse Bank, *Solvency II ORSA oefening 2012 FAQ* (De Nederlandse Bank, 2012).

<sup>25</sup> De Boer, Leo, en Fred Treur. "Tien transformaties verzekeringssector: innovatieparadox". *Verbond van Verzekeraars*, januari 2014.

<sup>26</sup> 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.

<sup>27</sup> 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.

<sup>28</sup> Ibid.