MANAGING GROWTH IN A STRINGENT REGULATORY ENVIRONMENT

SOLVENCY II AND WHAT IT MEANS FOR EUROPEAN UNION INSURERS

DECISIONPOINT™ by WNS

DECISIONPOINT™ by WNS

SOLVENCY II ADOPTED AFTER MORE THAN 10 YEARS IN THE MAKING

After the financial crisis of 2008, governments across the globe formed regulatory bodies and passed new regulations for enhanced supervision, effective resolution planning and higher loss absorbency of financial service organizations. This paper focuses on one of the key regulations in the insurance industry – Solvency II – which gained traction particularly after the financial crisis. The EU legislation adopted the Solvency II Directive in November 2009, to be implemented in all 28 Member States, including the UK, in order to improve customer protection, modernize supervision, deepen integration (within the EU) and expand insurers' competitiveness. The legislative programme got amended by Directive 2014/51/EU of the European Parliament and European Council on April 16, 2014 (the so-called "Omnibus II Directive"). After more than 10 years in the making, Solvency II was implemented beginning January, 2016.

SOLVENCY II IN NUTSHELL

The Solvency II framework directive introduced a new, harmonized EU-wide insurance regulatory regime. Solvency II replaced 14 EU insurance directives of Solvency 1. Exhibit 1 provides a brief snapshot of what Solvency II entails.

EXHIBIT 1

Snapshot of Solvency II

WHY?

- Solvency II facilitates the development of an integrated EU market for insurance services, whilst at the same time, securing an adequate level of consumer protection

WHO?

- The regulation applies to almost all EU insurers and reinsurers
- Only the smallest ones (which fulfill a number of conditions, including having gross written premium income < €5 million annually) are not subject to these new rules

WHAT HAS CHANGED?

(Compared to Previous Standards)

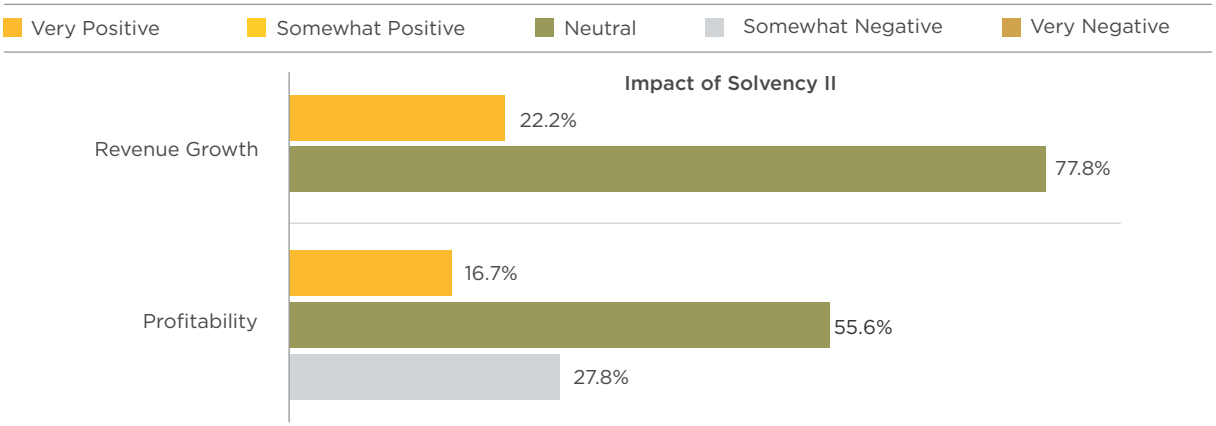
- Introduction of **economic risk-based** solvency requirements
- **Quantitative requirements –** over and above the technical provisions
- **Own Risk and Solvency Assessment (ORSA) -** Likely future developments to be considered
- **Supervisory Review Process (SRP) –** Better and earlier identification of insurers, which might be heading for difficulties
- Establish functions, or specific areas of responsibility and expertise, to deal with **risk management, risk modeling** (for internal model users), **compliance, internal audit** and **actuarial issues**

Source: European Commission

While implementation of Solvency II is likely to cause no visible impact on revenue growth, profitability is expected to be hampered primarily for high risks businesses where capital requirements are high. Exhibit 2 highlights the impact of Solvency II on the revenue growth and profitability of European insurers.

EXHIBIT 2

Impact of Solvency II on Revenue Growth and Profitability



Source: Based on interviews with 18 senior executives from leading European insurers

While all the insurers have already implemented certain measures (related to technologies and systems) to get ready for the provisions of Solvency II, companies must still reduce business complexities to function effectively and efficiently in this stringent operating environment going forward. Business complexities could result from having growing portfolio of products, legacy IT systems, disparate processes and multiple channels, leading to higher operational costs for the insurers. Most of these business complexities will also increase risks, push up capital requirements and hurt the

growth potential of the insurers. Insurance firms can optimize operations to pare down costs and can leverage digital technologies to reduce business complexities and offset the potential reinvestment risk arising from prolonged low interest rate environment. Further, as Solvency II places greater emphasis on risks (primarily in terms of capital requirement), optimal risk management strategies are the need of the hour. In this respect, WNS DecisionPoint™ conducted a study, as highlighted in Exhibit 3, to determine the significance of insurers' risk management strategies in relation to shareholder value (returns).

The study considered Underwriting Efficiency Ratio (UR, calculated by dividing Operating Expense/ Insurance Income) as a measure of insurance risk, and the investment yield (IY) as an indicator of market risk. The analysis revealed that Property and Casualty (P&C) insurers with low insurance and market risks outperformed their peers in terms of shareholder value creation.

However, in the case of life and multi-line insurance businesses, shareholder value creation was linked to insurers having an optimal level (defined in Exhibit 3) in terms of both underwriting and investment risks. Companies with high or low insurance risks or high or low market risks (partially optimal, defined in Exhibit 3) or both (sub-optimal, defined in Exhibit 3) underperformed in terms of shareholder value creation compared to those that had optimal levels of insurance and market risks.

Deciding on the optimal level of insurance and market risks in the case of life insurance business can be tricky. However, drafting growth strategies according to the market attractiveness and intensity of competition in a particular geography where the insurer operates can help optimize risks. Companies should also consider their own capabilities while chalking out their growth strategies.

The reason for stock markets approving different risk management strategies for P&C and Life and Health (L&H) insurers could be due to the different nature of the businesses. P&C businesses are primarily dependent on policy renewals and frequent risk assessments, and are short term in nature. Life insurance companies, on the other hand, receive recurring premiums and pay losses slowly. Hence, the underwriting and market risk requirements of both the businesses tend to differ. Exhibit 3 highlights the risk-return levels of insurers by product mix in the EU.

EXHIBIT 3.1

Relative Risk-Return (RR) Management Matrix – Life and Health Insurers

	SD-UR	Mean-UR	SD-IY	Mean-IY	Risk Return Category	Share Price Change	Observations
$L\&H_1$	30.6%	159.4%	0.7%	1.0%	Partially Optimal	152.7%	Diversified revenue streams (including asset management fee) is helping the firm to offset underwriting losses and outperforming peers in terms of shareholder value
$L\&H_2$	28.1%	153.4%	2.9%	5.8%	Optimal	126.0%	
$L\&H_3$	4.0%	139.1%	1.7%	3.3%	Optimal	97.9%	
$L\&H_4$	79.7%	263.6%	1.4%	3.1%	Partially Optimal	37.2%	
$L\&H_5$	45.4%	219.6%	5.0%	11.2%	Sub-Optimal	11.5%	
$L\&H_6$	20.4%	128.4%	0.9%	3.9%	Partially Optimal	-28.2%	
$L\&H_7$	80.3%	213.0%	1.6%	6.1%	Optimal	-45.9%	Despite falling in the optimal category, the insurer has been unable to create shareholder value; could be on account of its highly volatile underwriting portfolio
$L\&H_8$	6.6%	116.8%	0.3%	2.7%	Sub-Optimal	-67.2%	
$L\&H_9$	84.1%	196.8%	5.2%	8.1%	Partially Optimal	-72.0%	

These numbers are taken from annual reports of top European companies. The names have been masked for confidentiality reasons

- If both Mean-UR and Mean-IY fall in the interquartile range, then the risk return category is deemed to be Optimal
- If only one of them falls in the interquartile range, then the risk return category is deemed to be Partially Optimal
- If neither of them falls in the interquartile range, then the risk return category is deemed to be Sub-optimal

EXHIBIT 3.2

Relative Risk-Return Management Matrix – Property and Casualty (P&C) Insurers

	SD-UR	Mean-UR	SD-IY	Mean-IY	Risk Return Category	Share Price Change	Observations
$P\&C_1$	4.9%	89.9%	0.4%	1.6%	Optimal	216.0%	
$P\&C_2$	11.9%	114.0%	1.8%	4.0%	Sub-Optimal	202.5%	The company was able to generate high returns because of its lower than 5-year average UR of 104 percent and 98.6 percent in 2013 and 2015 respectively, where the insurer generated more than 77 percent of the total 202.5 percent share price increase in 2013 and 2015
$P\&C_3$	5.5%	94.0%	0.7%	1.5%	Optimal	137.6%	
$P\&C_4$	4.7%	89.6%	1.3%	2.1%	Optimal	113.5%	
$P\&C_5$	4.6%	95.9%	0.4%	4.6%	Partially Optimal	99.4%	Consistent reduction in insurance risk, improvement in UR from 102.6 percent in 2011 to 90.9 percent in 2015 could have led to higher shareholder value
$P\&C_6$	6.8%	102.4%	0.1%	3.1%	Partially Optimal	77.7%	Consistent reduction in insurance risk, improvement in UR from 114.7 percent in 2011 to 98.7 percent in 2015 could have led to higher shareholder value
$P\&C_7$	7.1%	119.5%	0.3%	1.0%	Partially Optimal	1.3%	
$P\&C_8$	8.2%	100.7%	4.0%	6.9%	Sub-Optimal	-20.2%	
$P\&C_9$	2.9%	100.7%	0.7%	4.5%	Partially Optimal	-33.8%	

These numbers are taken from annual reports of top European companies. The names have been masked for confidentiality reasons

- If both Mean-UR and Mean-IY fall below median, then the risk return category is deemed to be Optimal
- If only one of them falls below median, then the risk return category is deemed to be Partially Optimal
- If none of them falls below median, then the risk return category is deemed to be Sub-optimal

EXHIBIT 3.3

Relative Risk-Return Management Matrix – Multi-line (ML) Insurers

	SD-UR	Mean-UR	SD-IY	Mean-IY	Risk Return Category	Share Price Change	Observations
MI_1	7%	141.5%	1.0%	5.3%	Partially Optimal	127.7%	▪ Despite falling under the Partially Optimal Category, the company's share price saw a considerable uptick which may be on account of reduction in UR to 129.9 percent in 2015, lower than the mean UR of 141.5 period for the last five years ▪ 55.4 percent of the total 127.7 percent increase in share price was recorded in 2015 suggesting that the decrease in UR in 2015 is the likely trigger
MI_2	9.8%	128.6%	2.0%	5.5%	Optimal	93.0%	Volatility levels of insurance risk exposure are moderately high because of decline in underwriting losses during the last two years
MI_3	1.5%	133.0%	0.7%	4.9%	Optimal	81.9%	
ML_4	2.1%	111.4%	0.5%	3.1%	Partially Optimal	48.6%	
ML_5	39.2%	140.3%	1.3%	3.8%	Sub-Optimal	19.9%	
ML_6	1.0%	126.4%	0.8%	4.1%	Optimal	16.4%	
ML_7	0.9%	104.5%	0.4%	5.5%	Partially Optimal	7.5%	
ML_8	12.2%	131.8%	3.2%	8.5%	Partially Optimal	5.1%	
ML_9	1.9%	107.5%	0.4%	4.5%	Partially Optimal	-36.1%	

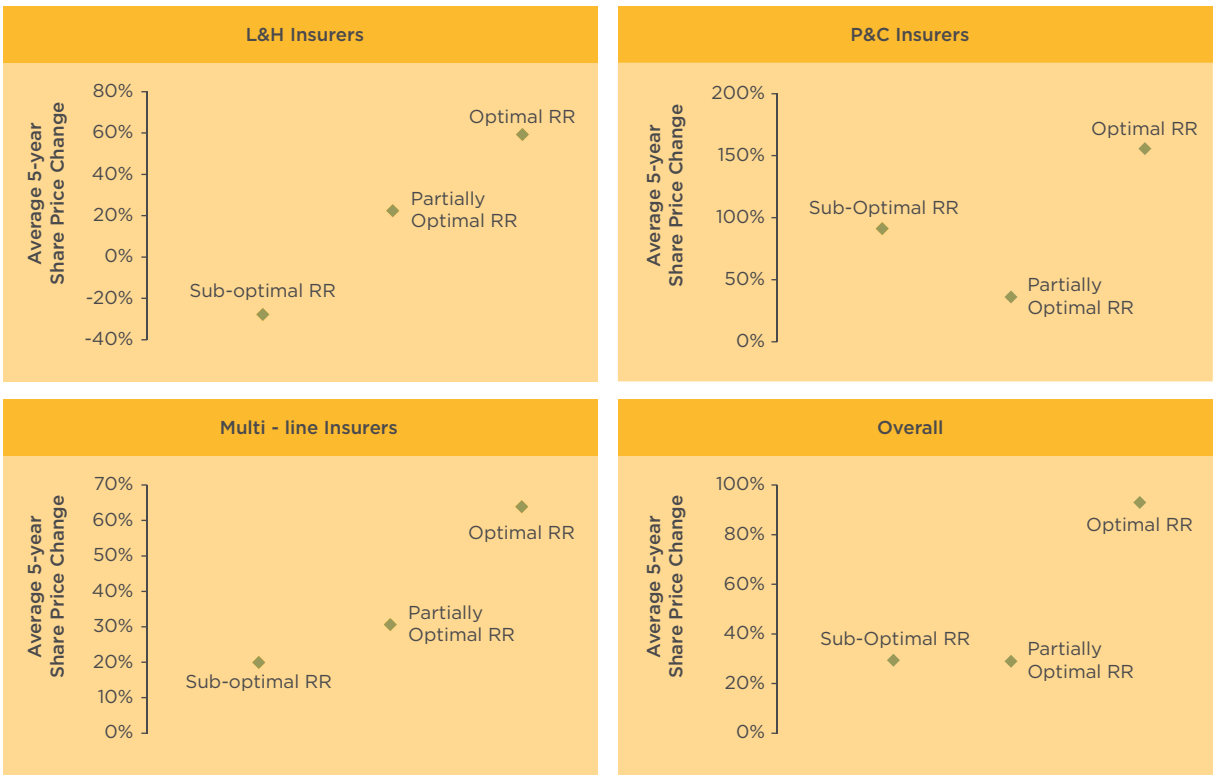
These numbers are taken from annual reports of top European companies. The names have been masked for confidentiality reasons

- If both Mean-UR and Mean-IY fall in the interquartile range, then the risk return category is deemed to be Optimal
- If only one of them falls in the interquartile range, then the risk return category is deemed to be Partially Optimal
- If neither of them falls in the interquartile range, then the risk return category is deemed to be Sub-optimal

Source: WNS DecisionPoint™ Analysis; Mean and Standard Deviation is for the last five years; Share Price Change is over January 2011 to December 2015; SD- Standard Deviation (Measure of Volatility); UR - Underwriting Efficiency Ratio, calculated by dividing Operating Expense/Insurance Income (Premiums and Annuity Revenue) – Calculated by dividing Investment Income by Investment Assets (Measure of Market Risk); Data points have been taken from S&P Capital IQ

EXHIBIT 3.4

Relative Risk-Return (RR) Analysis



Source: WNS DecisionPoint™ Analysis

As reflected in Exhibit 3.4, managing risks optimally, i.e. effectively (neither high nor low) in case of L&H and Multi-line and efficiently (low risks) in P&C (General Insurance), tend to lead to higher shareholder returns. On an average (overall basis), the Optimal RR category insurers witnessed an improvement of 92.9 percent in their share price compared to an only 30.0 percent change in case of Partially Optimal/Sub-optimal categories of insurers. It was also identified that new business growth had a far lesser bearing (as compared to underwriting and market risks) on the shareholder value accretion for L&H insurers with moderate to high UR. However, insurers with low UR need to generate enough new business growth to garner shareholder value which may push the UR higher in the future. This paper focuses on how to manage risks optimally and lays down a clear roadmap and guidelines to achieve the end-objective of managing growth post Solvency II implementation. As a precursor, however, the paper aims to understand the impact of Solvency II on insurers' value chain so as to understand, which business functions insurers should focus upon more.

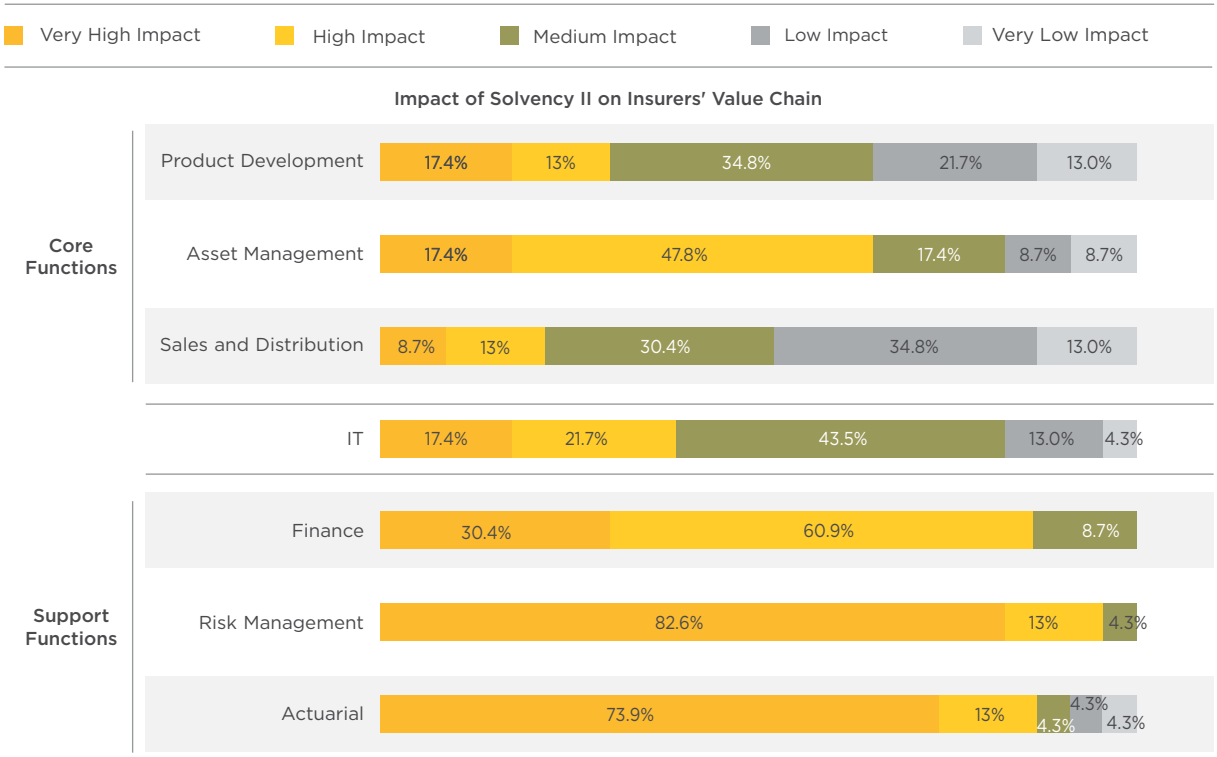
RISK MANAGEMENT, ACTUARIAL, FINANCE AND ASSET MANAGEMENT FUNCTIONS HAVE BEEN HIGHLY IMPACTED BY SOLVENCY II

Solvency II requires insurers to adapt to 1) new solvency calculation models, data management processes and complex reporting requirements to evaluate the risk exposure; 2) faster internal and external reporting mechanisms; 3) data integration across various lines of businesses and geographies. All these requirements had a net impact on insurers' administrative costs associated with Solvency II. The UK insurers have only invested ~ £3 billion[i] to be compliant with Solvency II apart from the business-as-usual costs they incur ever year.

WNS DecisionPoint™ conducted a survey to assess the impact of Solvency II on the insurers' business model. Predictably, the survey showed that most of the impact of Solvency II was felt on risk management, actuarial, finance and asset management functions as reflected in Exhibit 4 below.

EXHIBIT 4

Impact of Solvency II on EU's Insurance Value Chain



Source: Based on interviews with 23 senior executives from leading European insurers

i Bloomberg

Apart from capital requirements, risk management is at the core of Solvency II. A robust risk management system should be able to continuously identify, measure, monitor, manage, and report risks at an individual and aggregate level. It should also be able to find out the incurred and potential risks and their interdependencies. These risks include those related to market, credit, underwriting and operations.

The actuarial function is another key function in the new system of governance under Solvency II It needs to coordinate the calculation of technical provisions, ensure the use of appropriate methods, models and assumptions, assess data quality, express opinions on underwriting policies, and appraise the adequacy of reinsurance arrangements.

The finance function needs to take care of faster reporting requirements and adopt relevant valuation methodologies.

On the IT front, legacy systems and siloed business units prevent the data aggregation needed for reliable, fact-based decisions. Data quality management seems to be the other main issue, probably due to multiple legacy systems and disparate solutions. Inadequate IT capabilities could make it difficult to quickly and accurately value assets and liabilities.

Asset/investment management becomes strictly important for insurers because of inherently higher underwriting efficiency ratios as shown earlier in the EU insurance business which forces them to make money via investments.

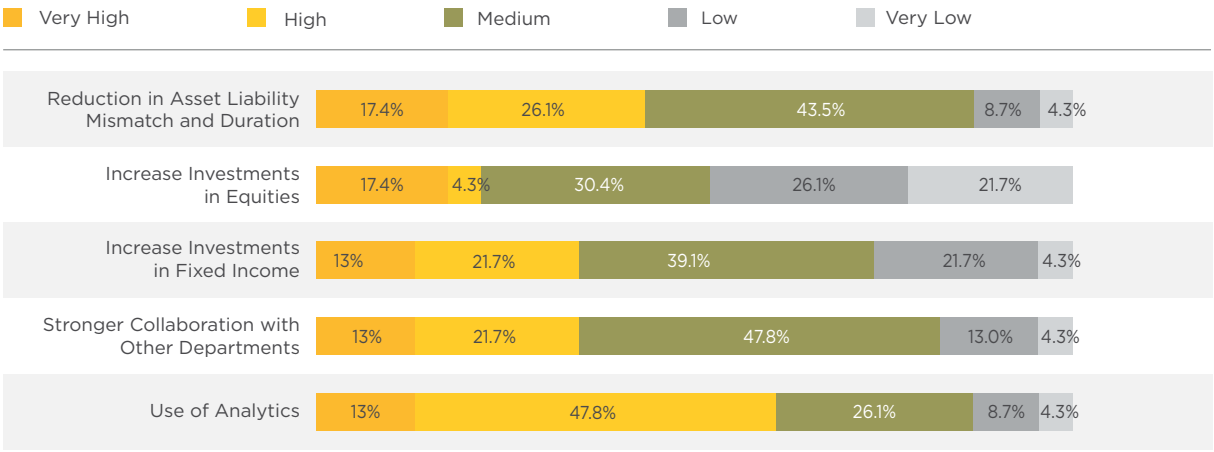
USE OF ANALYTICS IN CORE FUNCTIONS IS EXCEEDINGLY HIGH

Amongst core operations, maximum impact is being felt by the asset management division as market risk and counter-party credit risk originates from investments. Asset managers need to take into account capital requirements arising out of the assets held and investments made. Asset managers need to consistently track asset exposures towards issuers, sectors, currencies and countries given the rising market volatility, largely post the financial crisis of 2008. Having this information on a daily or real-time basis rather than on a monthly or quarterly basis can enable effective management of the market, counterparty and country risks. Apart from managing the aforementioned risks, reduction in asset-liability mismatch is one of the main focus areas of asset managers to mitigate market risk/liquidity risk and lower capital requirements. Exhibit 5 lists the key priorities of the investment/asset management function.

Around 87 percent of the EU insurers use insights from analytical tools and technologies significantly (medium to very high focus) to make investment decisions

EXHIBIT 5

Focus Areas of Investment Management in Response to Solvency II

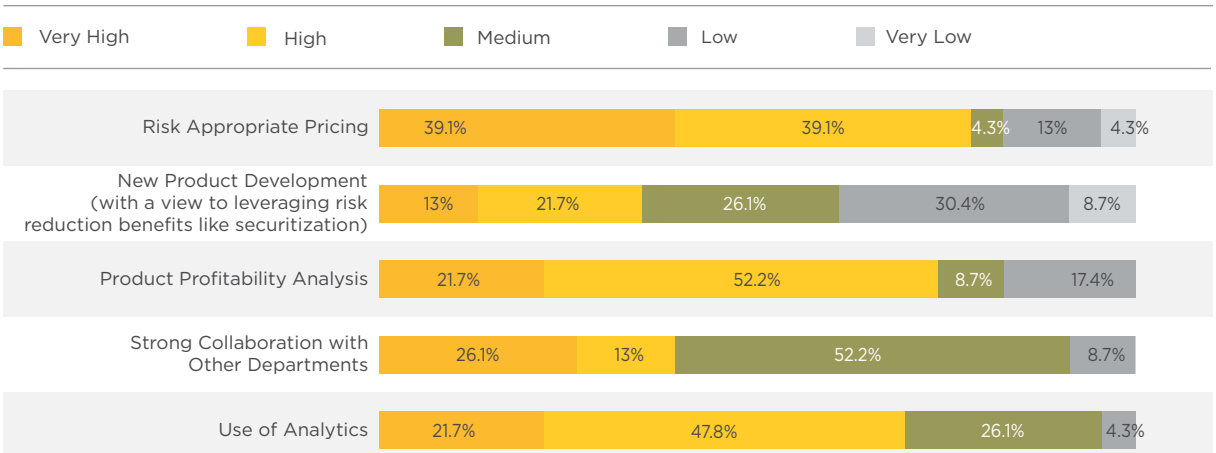


Source: Based on interviews with 23 senior executives from leading European insurers

With customers increasingly seeking sophisticated, customizable products at lower costs and Solvency II making insurers take into account the capital requirements and investment side of the business when designing products, product development is also feeling pressure to improve. The focus areas for improvement are in use of analytics, risk appropriate pricing or pricing-centered policy features and product profitability analysis. The main aim for all these strategies is to lessen underwriting risks. One reason analytics is receiving so much focus is that it allows for the tracking of product portfolio exposure to mortality, longevity, health, catastrophe risks and other such concerns. Given the sufficient overlap in goals, both risk managers and asset managers are also likely to play a key role in product development and design. Exhibit 6 displays the key focus areas of product development division for EU insurers in response to Solvency II.

EXHIBIT 6

Focus Areas of Product Development in Response to Solvency II



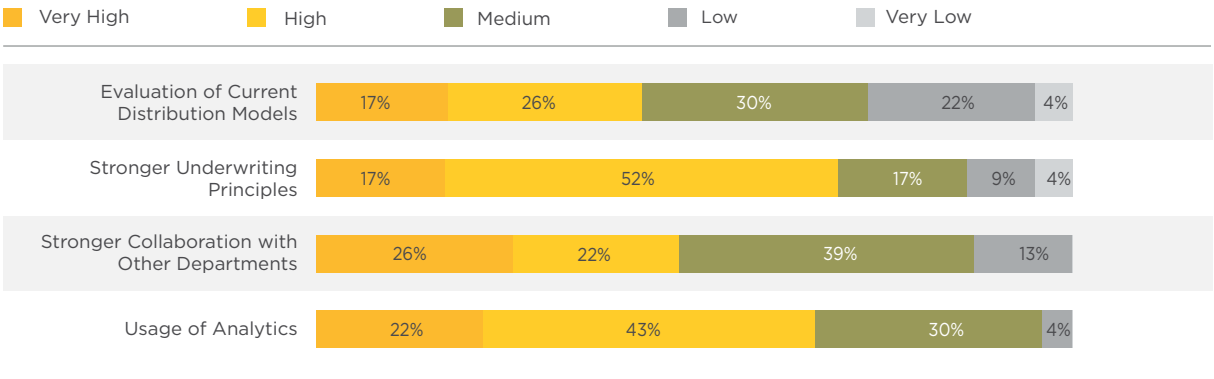
Source: Based on interviews with 23 senior executives from leading European insurers

Sales and distribution of insurance products are comparatively less impacted due to Solvency II. However, underwriting's importance could reshape sales and distribution channels in the future. Distribution models need to be evaluated to check the suitability of some products. Certain policies may only be profitable if their customer acquisition costs or sales incentives are below a certain threshold. For now, as companies are becoming stricter in terms of underwriting risks, sales and distribution are using analytics to predict frauds. Focus areas of sales and distribution department are shown below in Exhibit 7.

Significant use of analytics is ubiquitous in the product development phase

EXHIBIT 7

Focus Areas of Sales and Distribution in Response to Solvency II

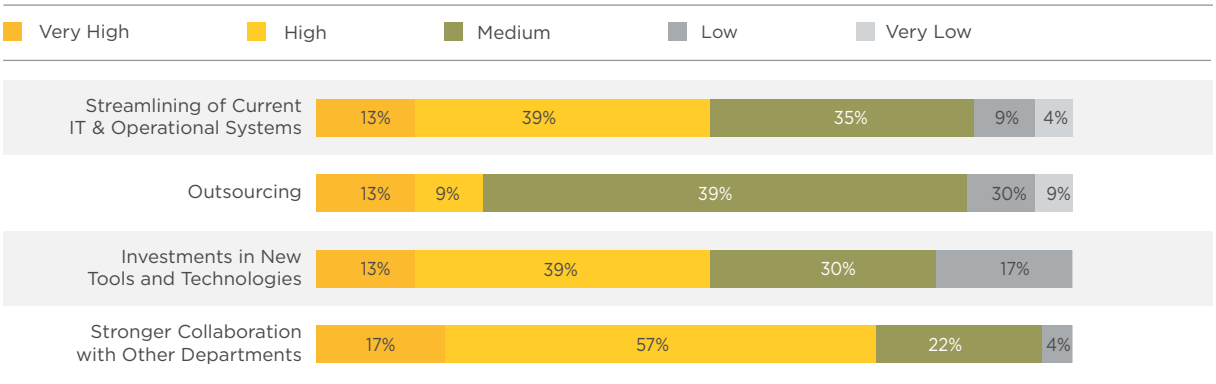


Source: Based on interviews with 23 senior executives from leading European insurers

Solvency II requires changes to technology processes, data and IT application architecture, and actuarial modeling functionality. Moreover, Solvency II requires firms to collect and prepare data faster and accurately. IT departments are primarily concentrating on better collaboration with other departments (as reflected in Exhibit 8) to implement and maintain the Solvency II requirements with most of the investments already being made in development of the applications and functionalities.

EXHIBIT 8

Focus Areas of IT and Operations in Response to Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

OUTSOURCING HAS BEEN NOMINAL IN SUPPORT FUNCTIONS AND IS LIKELY TO INCREASE GRADUALLY POST SOLVENCY II

The directive (Solvency II) laid down certain key provisions, which prompted the redesign of insurers' support functions. For example: 1) Provisions related to the Valuation of Assets and Liabilities require an insurer to maintain consistency with regard to accounting standards. 2) Rules relating to Technical Provisions require insurers to set up technical provisions (normally the largest item on an insurer's balance sheet), which correspond to the current amount they would have to pay if they were to immediately transfer their (re)insurance obligations to another company. The value of the technical provisions is equal to the sum of a best estimate and a risk margin. In the first case mentioned above, Finance department needs to understand the technicalities of valuation methodologies and accordingly, recognize and measure various assets and liabilities quickly. In the second case, actuarial and finance departments will play a significant role in adhering to the provisions. Actuarial function needs to coordinate with the calculation of technical provisions, ensure the appropriateness of methods, models and assumptions, assess data quality, appraise underwriting policies and help in adhering to the Solvency II requirements. Exhibit 9 lists down key provisions of Solvency II and their impact on different elements of insurance value chain.

EXHIBIT 9

Salient Provisions of Solvency II and Key Stakeholders Involved

Salient Provisions	Major Influencers	Implications for Insurers
Valuation of Assets and Liabilities	Finance	▪ Understand the technicalities of valuation methodologies and accordingly, recognize and measure various assets and liabilities
Rules Relating to Technical Provisions	Finance, Actuarial	▪ Coordinate the calculation of technical provisions, ensure methods, models and assumptions are appropriate, assess data quality and appraise underwriting policies
Own Funds	Finance, Investment Management	▪ For covering quantitative Solvency II requirements, there are restrictions on certain classes of capitals (tiers) ▪ Finance team and investment managers need to work in tandem to acquire and allocate capital to different tiers based on the requirements set out by the Directive
Solvency Capital Requirement Standard Formula	Risk Management, Actuarial	▪ Although the standard formula is, by definition, more general and straightforward, there is a view that an internal model provides far wider business benefits such as reduced regulatory capital, and improved risk management ▪ Internal Model is the collection of processes, systems and calculations that together quantify the risks faced by the business. Activities needed to implement Internal Model include › Development of actuarial systems to calculate best estimate liabilities, risk margins and stresses › Development and testing of various components of
Solvency Capital Requirement — Full and Partial Internal Models		
Minimum Capital Requirement		

Salient Provisions	Major Influencers	Implications for Insurers
		the Internal Model running various risk scenarios and calculations, replicating models, providing operational risk reporting and tax and capital rules, economic capital calculation engine/simulation, aggregation and diversification rules ▪ Both risk management and actuarial department needs to work in conjunction to assess market, counter-party credit, underwriting, and operational risks and accordingly calculate required capital. Standardized statistical and structural capital modeling tools are must for these calculations
System of Governance	Compliance, Risk Management, Internal Audit and Actuarial	▪ This provision stipulates companies to have an effective system of governance in place to facilitate sound and fair business management ▪ Apart from having functions such as risk management, compliance, internal audit and actuarial, insurers need to facilitate effective functioning of GRC^ systems ▪ The risk-management function should be structured in such a way as to facilitate the implementation of the GRC system, comprising of and reporting procedures necessary to identify, measure, monitor, manage and report the various risks on an ongoing basis ▪ An internal control system including the compliance function should incorporate at least the following three areas: administrative and accounting procedures, internal control framework and apt reporting arrangements at all levels in the company
Public Disclosure	Finance	▪ Insurers need to file a Solvency and Financial Condition Report (SFCR) with information on business performance, system of governance, risk profile etc. ▪ Insurers and reinsurers shall disclose the SFCR no less than 14 weeks after the undertaking's financial year end
Regular Supervisory Reporting	Finance	▪ Similar to SFCR, insurance companies need to submit a Regulatory Supervisory Report (RSR) comprising of all the constituents of SFCR as well as ORSA (Own Risk and Solvency Assessment) ▪ Rather than submitting the report to the public like for SFCR, insurance companies need to submit the RSR at least every three years to supervisors/regulators ▪ The deadline for RSR remains the same as for SCFR except at least every three years

Source: Official Journal of the European Union; WNS DecisionPoint™ Analysis

^GRC - Governance, Risk Management and Compliance

Outsourcing levels, which were low before the implementation of Solvency II, are likely to pick up marginally post implementation. Some of the plausible causes for outsourcing support functions could be the requirements around performing complex capital calculations, risk assessments and reporting in shorter periods of time, higher data quality and new data management processes.

Marginal increase in outsourcing of support functions seems to be more applicable for large players. Most of the smaller players still do not have the required resources for actuarial and risk assessment related work.

Exhibit 11 lays down certain essential tools for creating a scalable structure across the three pillars depicted in Exhibit 10.

EXHIBIT 10

Three Pillars of Solvency II

Pillar 1 Financial Requirements	Pillar 2 Governance and Supervision	Pillar 3 Reporting and Disclosure
Two thresholds: ▪ Solvency Capital Requirement (SCR) ▪ Minimum Capital Requirement (MCR)	Effective Risk Management System	Insurers are required to publish details of the risks, capital adequacy and risk management practices
SCR is calculated using either a standard formula or, with regulatory approval, an Internal Model	Own Risk and Solvency Assessment (ORSA)	Transparency and open information regarding capital requirements and risk exposures are intended to assist market forces in imposing greater discipline in the industry
MCR is calculated as a linear function of specified variables: it cannot fall below 25 percent, or exceed 45 percent of an insurer's SCR.	Supervisory Review and Intervention	
Harmonized standards for the valuation of assets and liabilities		

Source: Lloyd's

EXHIBIT 11

Key Tools for Creating a Scalable Risk Management Structure

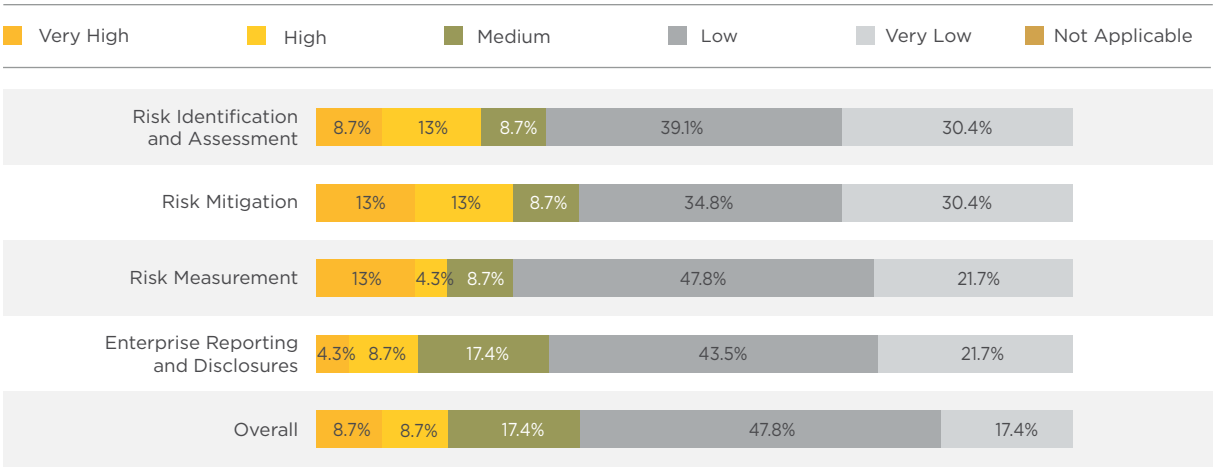
	Pillar 1	Pillar 2	Pillar 3
▪ Key Functions Impacted	▪ Finance, Actuarial, IT	▪ Risk Management, Actuarial, IT	▪ Finance, IT
▪ Essential Tools Required	▪ Standardized Capital Modeling, Data Warehousing, Data Integration and Data Documentation Tools	▪ Automated Risk Management Tools and Reporting Metrics ▪ Advanced Analytics Tools and Technologies ▪ Data Warehousing, Data Integration and Data Documentation Tools	▪ Advanced BI and Reporting Applications ▪ Data Warehousing, Data Integration and Data Documentation Tools

Source: WNS DecisionPoint™ Analysis

Outsourcing penetration had been pretty limited in pre-Solvency II era and is expected to marginally increase post implementation in risk management primarily for better risk assessments as reflected in Exhibit 12 and 13. Calculation of value-at-risk and stress tests scenarios, credit assessment, automation of risk reporting metrics and compliance with anti-money laundering and know your customer laws are the commonly outsourced areas in risk management.

EXHIBIT 12

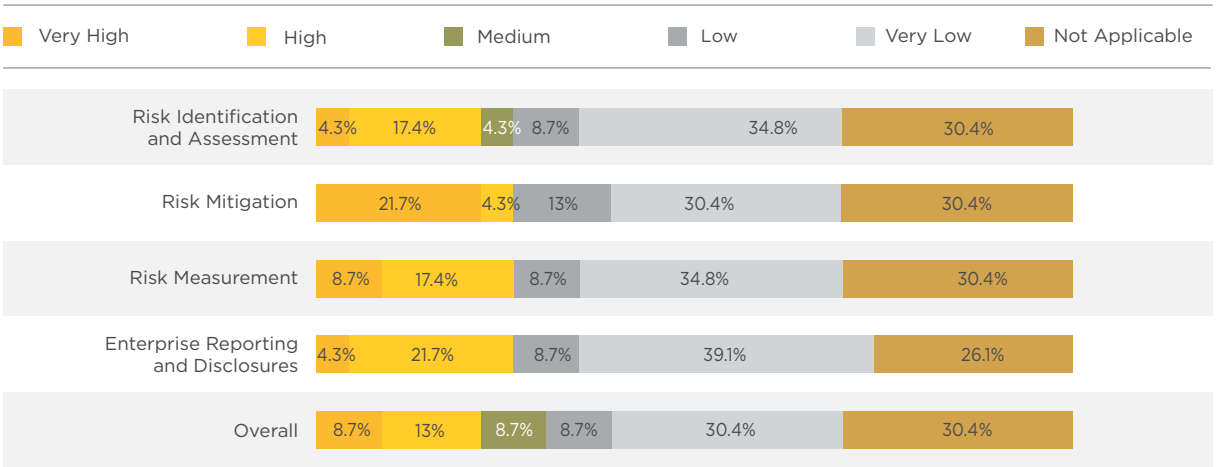
Outsourcing in Risk Management Pre-Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

EXHIBIT 13

Outsourcing in Risk Management Post Solvency II

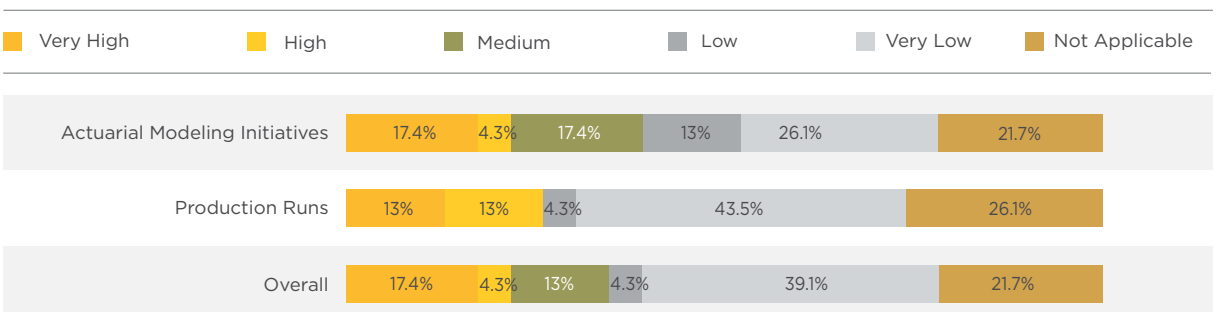


Source: Based on interviews with 23 senior executives from leading European insurers

Actuarial function, on the other hand, is expected to witness decrease in outsourcing activity levels post Solvency II implementation (refer Exhibit 14 and 15). One of the probable reasons for the decrease could be that complex calculation models are already in place and will just need data entry and maintenance.

EXHIBIT 14

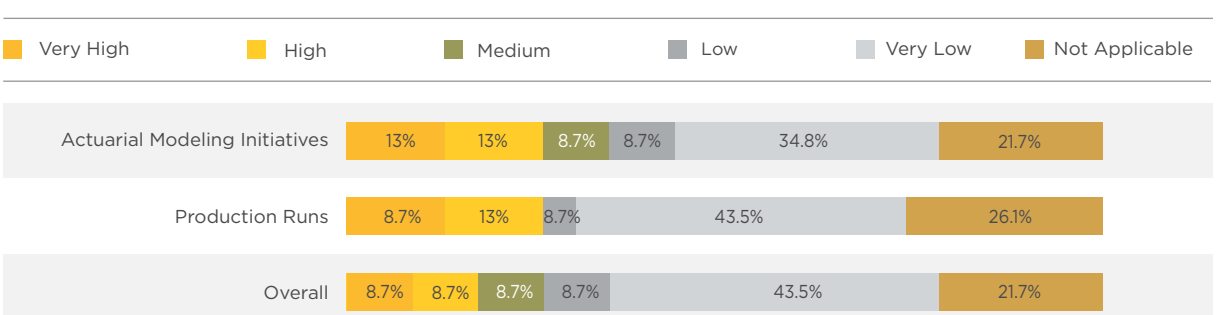
Outsourcing in Actuarial Function Pre-Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

EXHIBIT 15

Outsourcing in Actuarial Function Post Solvency II

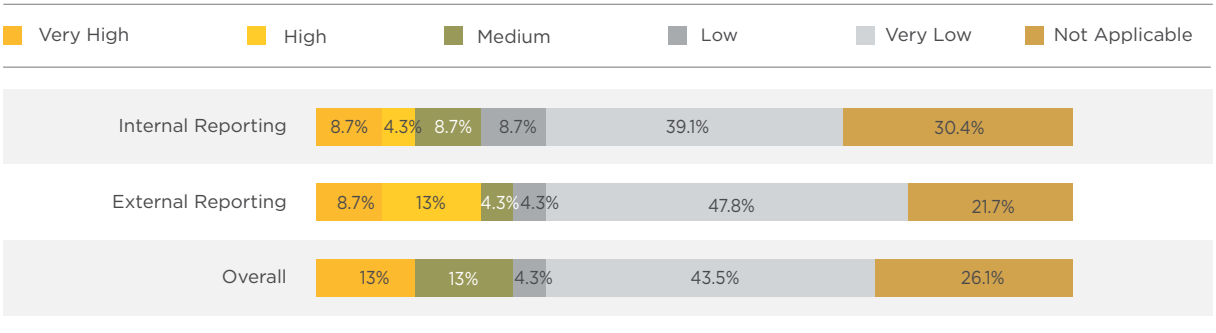


Source: Based on interviews with 23 senior executives from leading European insurers

Finance function is likely to register an uptake, though marginally, on account of faster reporting requirements. Exhibit 16 and 17 depicts the outsourcing activity levels in finance function in pre and post Solvency II era.

EXHIBIT 16

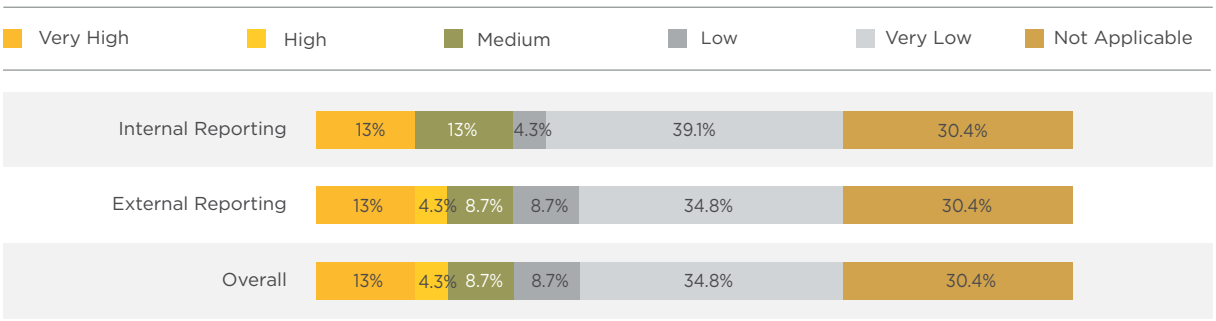
Outsourcing in Finance Function Pre-Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

EXHIBIT 17

Outsourcing in Finance Function Post Solvency II

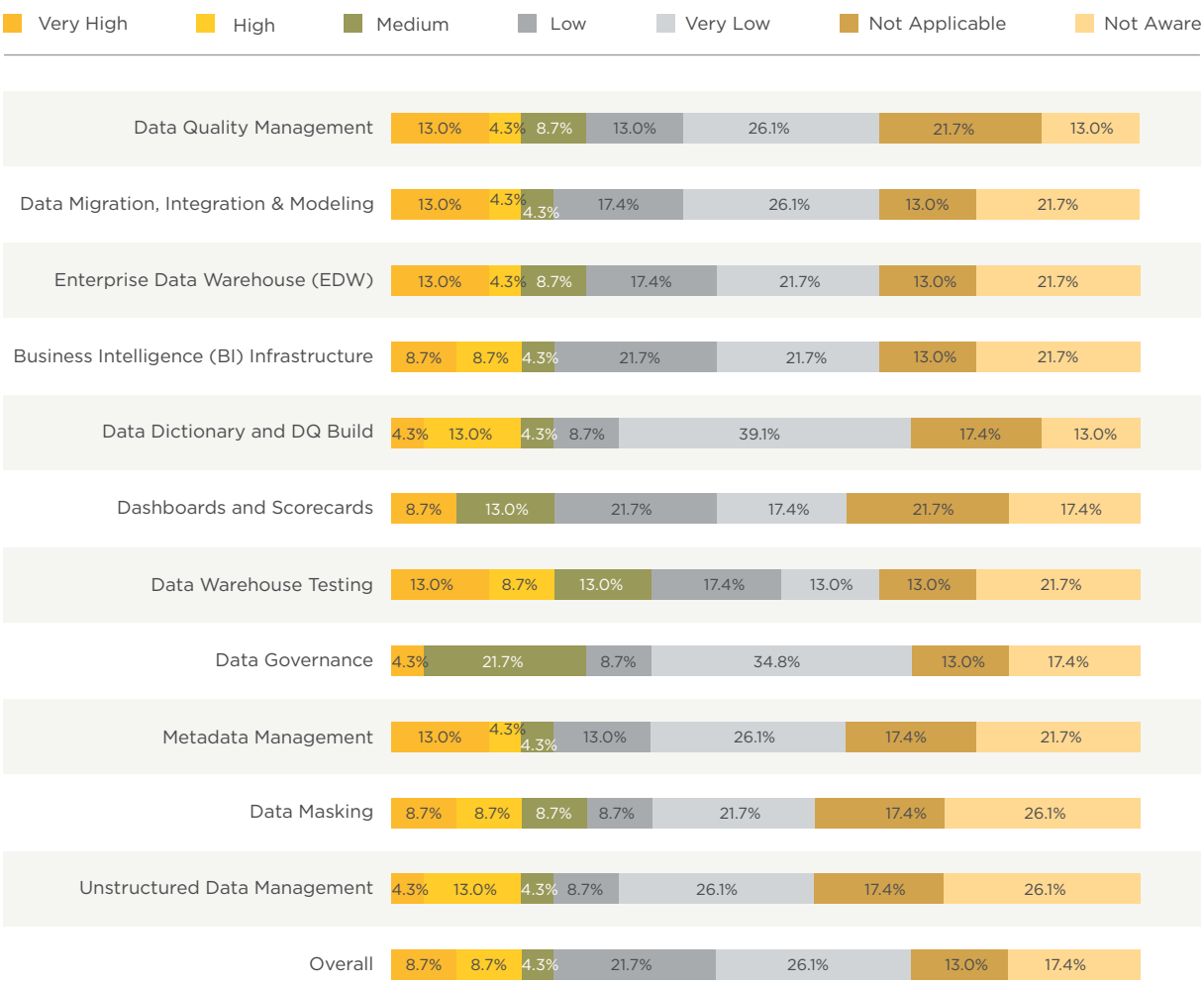


Source: Based on interviews with 23 senior executives from leading European insurers

IT outsourcing is expected to register the highest increase going forward as firms look to reduce legacy systems in policy servicing and claims management and enable straight through processing via automation. The aim for the majority of insurers is to simplify and standardize processes and systems in order to reduce operating costs and accelerate the speed to market of new products. Exhibit 18 and 19 highlight the levels of outsourcing in pre and post Solvency II implementation.

EXHIBIT 18

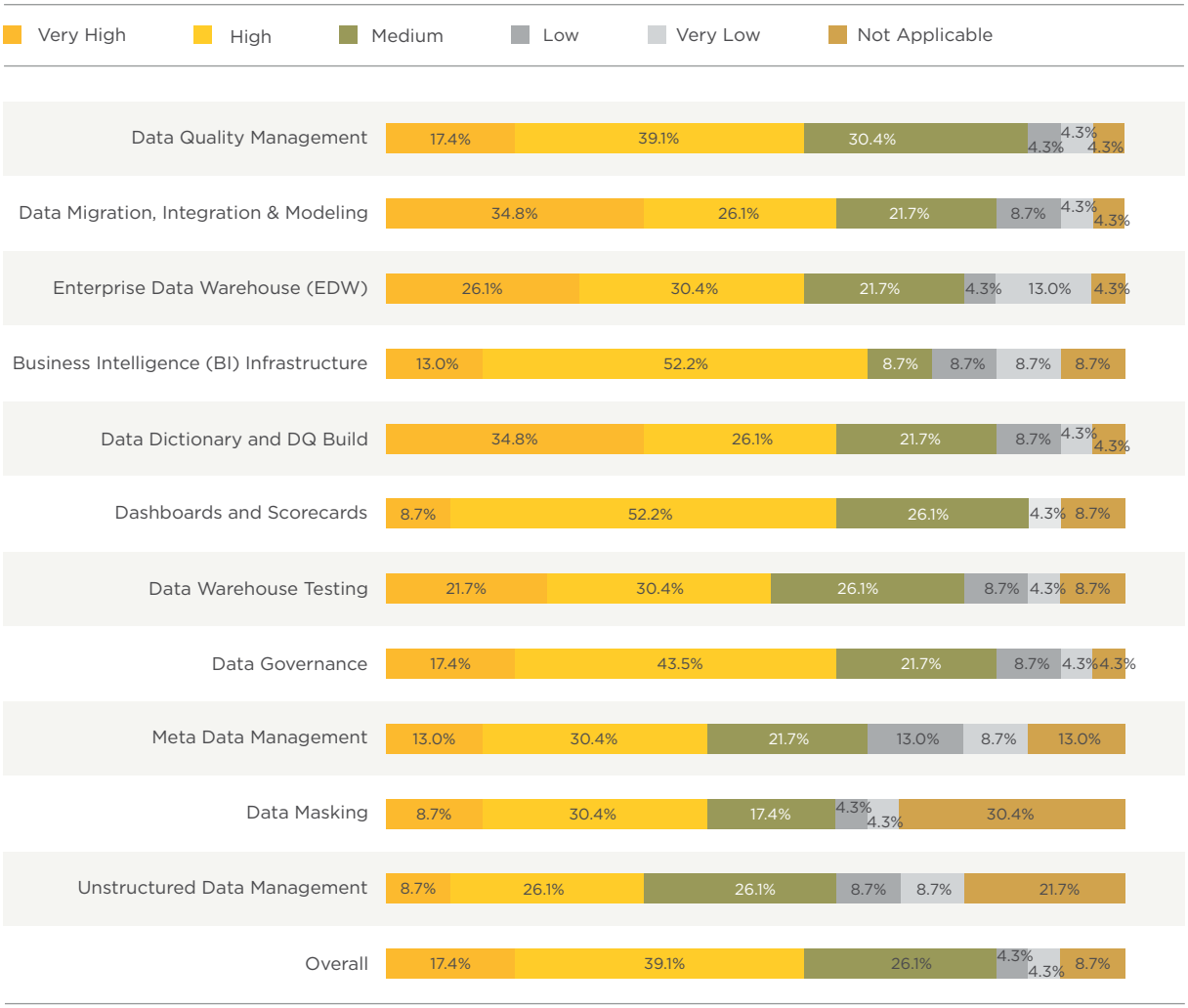
IT Outsourcing Pre-Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

EXHIBIT 19

IT Outsourcing Post Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

OPTIMIZE RISK-RETURNS PRUDENTLY

With Solvency II impacting the whole insurance value chain (particularly investment management and support functions) and making capital requirements linked to the insurer's risk profile, industry players have made relevant adjustments, whether they be reducing duration, adopting risk-appropriate pricing, streamlining systems, changing product mix and so on, to reduce risks, as stated above. Cutting down risks may yield higher shareholder returns in case of P&C business but could pare share price gains in case of life and health insurance as witnessed above in Exhibit 3. Different risk requirements are needed for P&C and L&H businesses to garner higher shareholder value as depicted in Exhibit 3. Following three approaches, in our experience, can help companies achieve the objective of managing risks prudently:

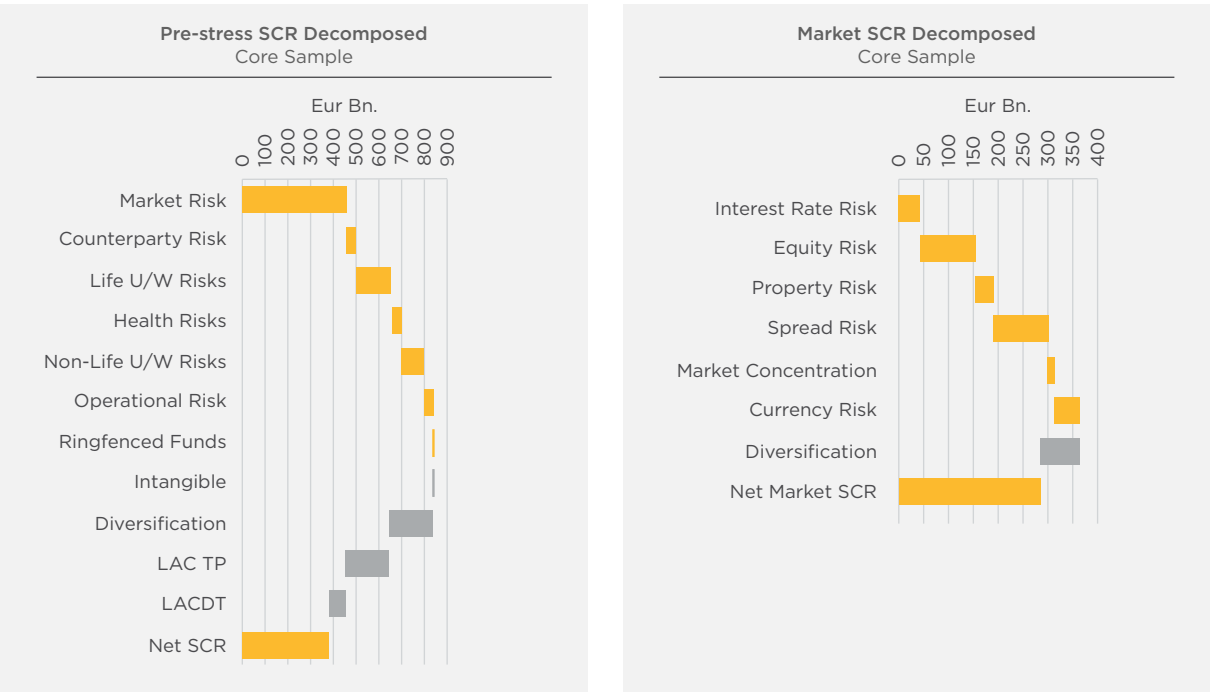
- **Carefully manage all risks with robust risk assessment frameworks to make suitable adjustments**
- **Handle risks optimally to achieve higher returns with minimum capital requirements**
- **Optimize operations and leverage digital technologies to reduce costs and offset potential losses from various risks**

ROBUST RISK ASSESSMENT FRAMEWORKS TO MAKE SUITABLE ADJUSTMENTS

The SCR is calculated based on the specific risks borne by an insurance company in relation to both its assets and liabilities. The SCR should correspond to the value-at-risk (VaR) of the basic own funds of an insurance company subject to a confidence level of 99.5 percent over a one-year period. The SCR takes five main risks categories into account: 1. Underwriting risk 2. Market risk 3. Counterparty (default) risk 4. Intangible risk and 5. Operational risk. Capital management, thus, becomes a multi-faceted exercise in Solvency II and has emerged as the key input parameter in building strategies around asset management, product development and underwriting functions. The primary reason for this multi-faceted role of capital management is the risks involved in each of the aforesaid core functions. Asset/investment management mainly deals with market risks and counterparty risks while product development and underwriting functions mainly deal with risks related to mortality, morbidity, longevity, fire, accident, catastrophes etc. Operational risks are related to inefficient systems, people and technology and impact the whole business of insurers. For each module (for example: market risk) and sub-module (for example: equity risk), insurers have to calculate the corresponding capital requirement, using stress scenarios. Exhibit 20 demonstrates the risks contribution to capital requirements of EU insurers.

EXHIBIT 20

SCR Decomposition

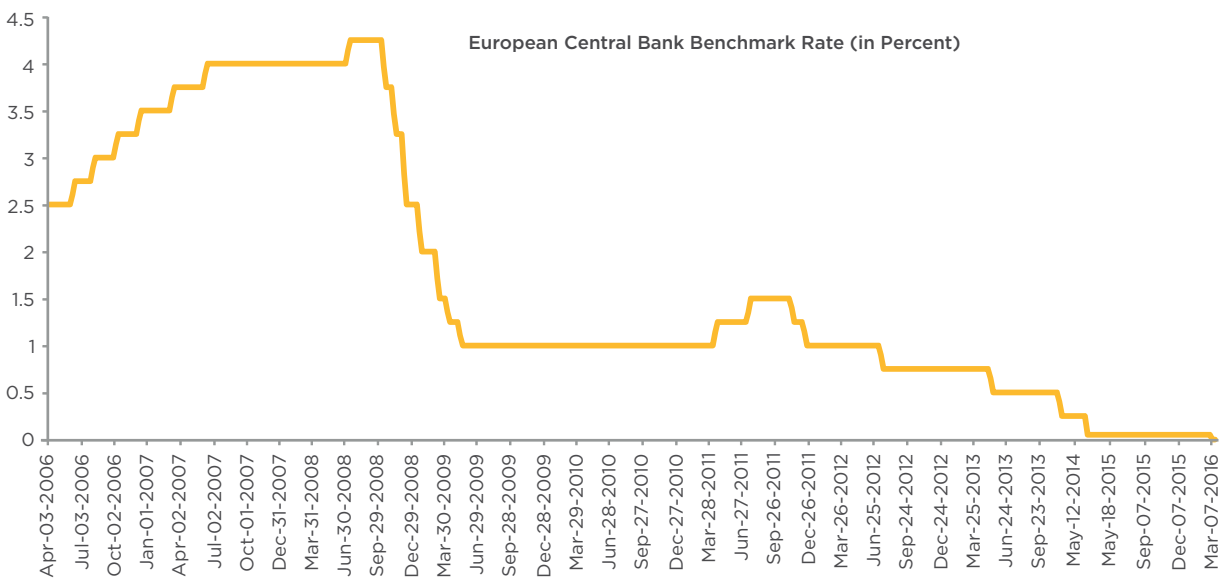


Source: EIOPA Stress Test Document 2014; LAC-TP - Loss Absorbing Capacity Technical Provisions; DT Deferred Taxes

Market risk is the risk of loss caused due to adverse movements in interest rate, equity, property, credit spread, market concentration and currency risks after adjusting for diversification levels. With prolonged low interest rate environment as reflected in Exhibit 21, earning sufficient return on reinvestments (fixed income, primarily, which forms the majority of the insurers' investment portfolio) is getting difficult. Reducing duration mismatch and proper hedging practices are on top of executives' mind to control or reduce the market risks arising out of investments in financial instruments.

EXHIBIT 21

Declining Interest Rates in Europe

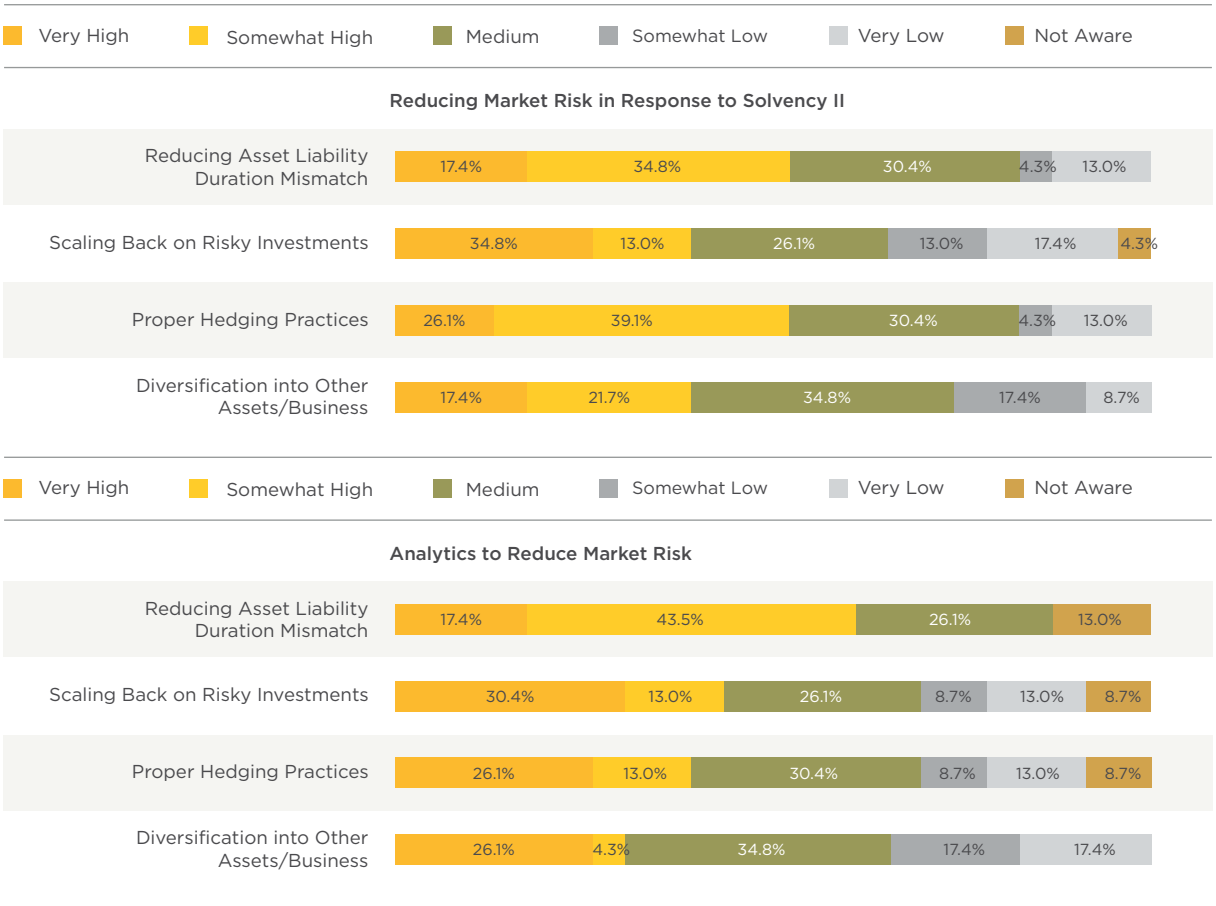


Source: Capital IQ

Apart from tracking exposures related to all investments, understanding their relationship with certain key drivers (interest rates, commodity prices, consumer spending, GDP growth, fiscal deficit etc.) and tracking their movement is also of utmost importance. For example, successful insurers look at the relationship between bond and interest rates via statistical techniques, apart from the bond convexity, to make decisions around portfolio composition and adjustments. Once the relationship is identified, insurers can predict the changes in interest rates via regressing on more than one outcome variable (using its expected value) such as inflation, GDP growth, fiscal deficit, foreign exchange among others. The same exercise can be applied with equity returns as the dependent variable regressed with other relevant independent variables. These interdependencies will help insurance organizations to make the right decisions regarding portfolio adjustments at the right time. Moreover, apart from tracking exposure to various assets and sectors and the above outcome variables, insights on credit rating of (bond) issuers need to be continuously tracked and necessary actions taken to optimally alter portfolio allocation strategies. For example, prolonged low crude oil and commodity prices have led to many oil and gas and commodity producers to file for bankruptcy or witness their credit ratings slump leading to significant losses for insurers due to a decline in bond values. Having information on all these developments in real-time or at the right time can help insurers cut their investment exposure and save lots of funds. Country-specific political and operational risks (such as sanctions) also need to be tracked. Insurance companies have been adopting advanced data analytics tools and technologies to track exposures and identify relationships with associated key drivers.

EXHIBIT 22

Reducing Market Risk in Response to Solvency II

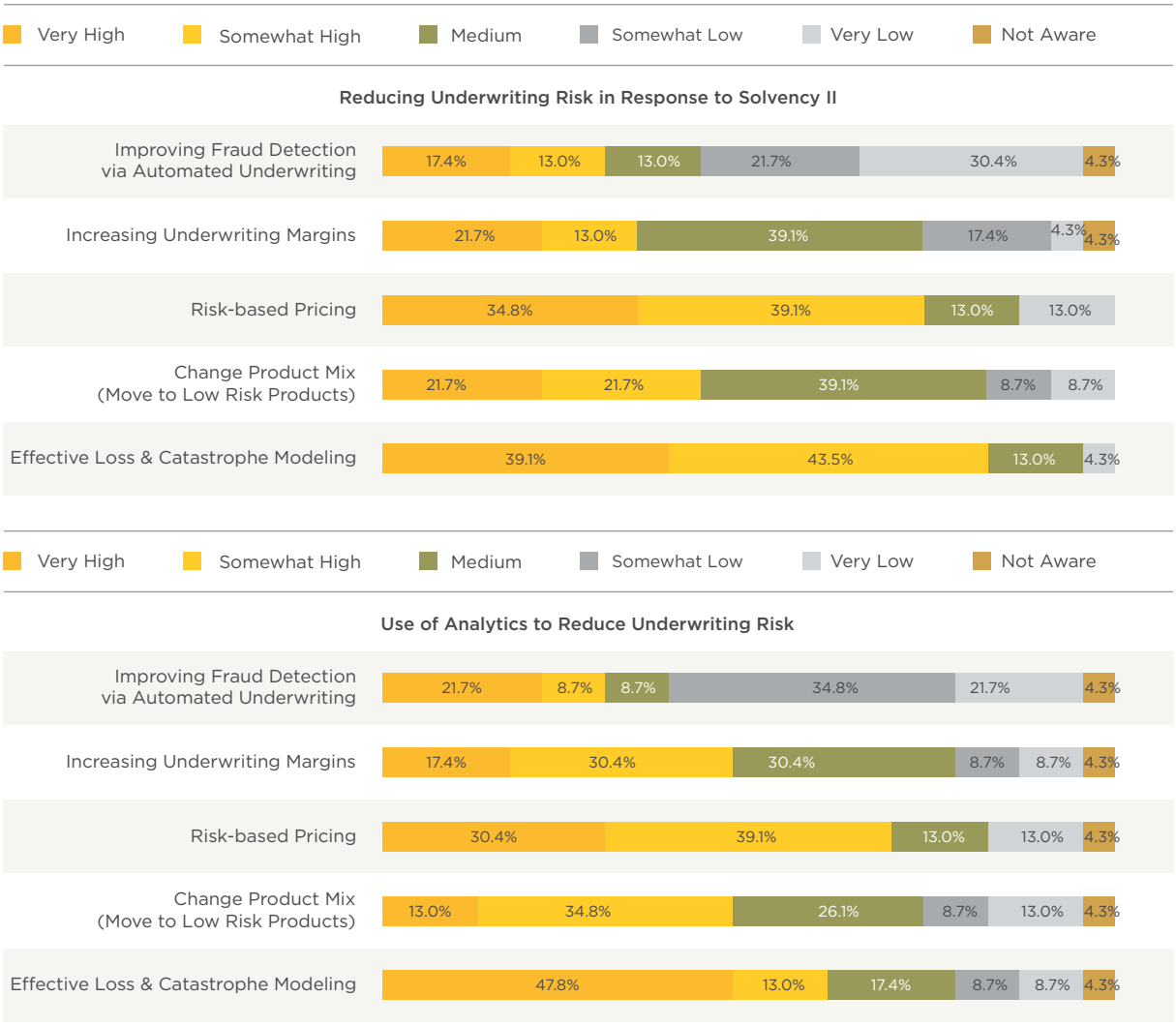


Source: Based on interviews with 23 senior executives from leading European insurers

Underwriting risks consists of premium and reserve risks in the P&C segment as well as biometric risks in the Life/Health business segment. Premium risk is subdivided into natural catastrophe risk, terror risk, and non-catastrophe risk. There should be clear centrally defined underwriting limits and restrictions in place. In addition, the local operating entities can have limits in place that take into account their business environments. Excessive risks should be mitigated through external reinsurance agreements. For estimating the losses from natural disasters, insurance firms can use special catastrophic modeling techniques. These new models are not only statistically driven but consider the structural drivers in the event of a natural disaster. This level of analysis is now possible because of the availability of big data tools and technologies. Though in its infancy, assessing pandemic risk is another example where this kind of structural risk modeling can be applied. By assessing such risks correctly, insurance firms can proactively inform customers about the predicted catastrophes (climate change and their impact) and disease outbreaks and implement measures (sending messages in advance related to natural disasters such as earthquake and floods and relevant preventive measures) to reduce the claims costs. Estimation of these events and accurate prediction of losses will also help insurers to maintain adequate reserves to pay out claims, helping them make optimal capital allocation. Controlling claims via advanced risk based pricing and effective loss and catastrophic modeling tools seem to be high on the agenda for insurers in Europe as depicted below in Exhibit 23.

EXHIBIT 23

Reducing Underwriting Risks in Response to Solvency II



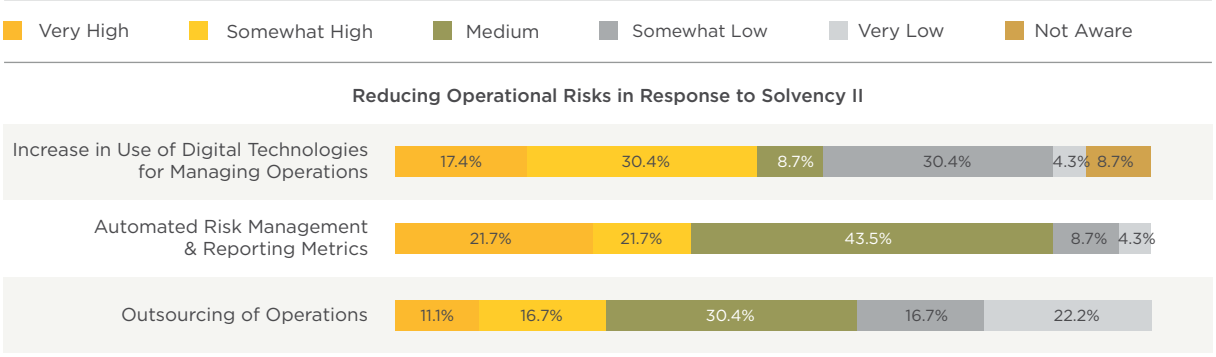
Source: Based on interviews with 23 senior executives from leading European insurers

Operational risk, for capital purposes, is defined as the risk of loss from inadequate or failed internal processes, people, and systems or from external events. To reduce risk arising from such failures, organizations need to record and assess their risk frameworks, including processes, risks, events, key risk indicators (KRI) and controls. Through dashboards and reports that highlight key risk metrics such as Value at Risk and policy compliance, executives can stay on top of organizational risk activities. Companies must employ business process automation capabilities that provide for real-time event escalation, automated risk processes, and efficient remediation of problems and action items. In addition, outsourcing of operations such as claims processing and managing policy servicing and policy issuance are being focused on in order to reduce operational risks. Insurers should have a business continuity and crisis management framework (including for outsourcing vendors) which strives to protect critical business functions from the above mentioned failures and enables them to carry out core tasks on time and in compliance with the

highest standards. This framework should be embedded within the overall risk management process. Firms should also work on a cyber and information security program on an ongoing basis, in order to better respond to current external developments and to further strengthen the internal control environment around related operational risks. Exhibit 24 lists the priorities of EU insurance firms to tackle operational risks.

EXHIBIT 24

Reducing Operational Risks in Response to Solvency II



Source: Based on interviews with 23 senior executives from leading European insurers

Solvency II requires insurers to change the risk culture. Given the risk-based capital requirements, it's imperative to have a scientific approach to risk management. Risk management now plays a pivotal role in board meetings and strategic decisions. It is no longer just a compliance element, but a critical pillar in determining winners and losers. Exhibit 25 highlights the varying maturity levels of risk management frameworks being adopted across insurance businesses.

EXHIBIT 25

Risk Management Maturity Framework

Non-existent	Ad hoc	Initial	Repeatable	Managed	Leadership
▪ Insurer has not recognized the need for risk management function ▪ Risks are not directly identified, managed and monitored	▪ Risk management processes have not been developed ▪ There is reliance on individual efforts to identify, manage and monitor risks	▪ Risk management processes have been implemented, but they are not consistent and effective ▪ Certain risks are defined and managed in silos	▪ Risk management is in place, and is designed and operated in a timely and consistent manner ▪ Actions are taken to address high priority risks	▪ Advanced risk management capabilities, strong collaboration and coordination across business units ▪ Processes are actively utilized	▪ Leading-edge risk management capabilities are present ▪ Risk management is embedded in strategic capital allocation decisions

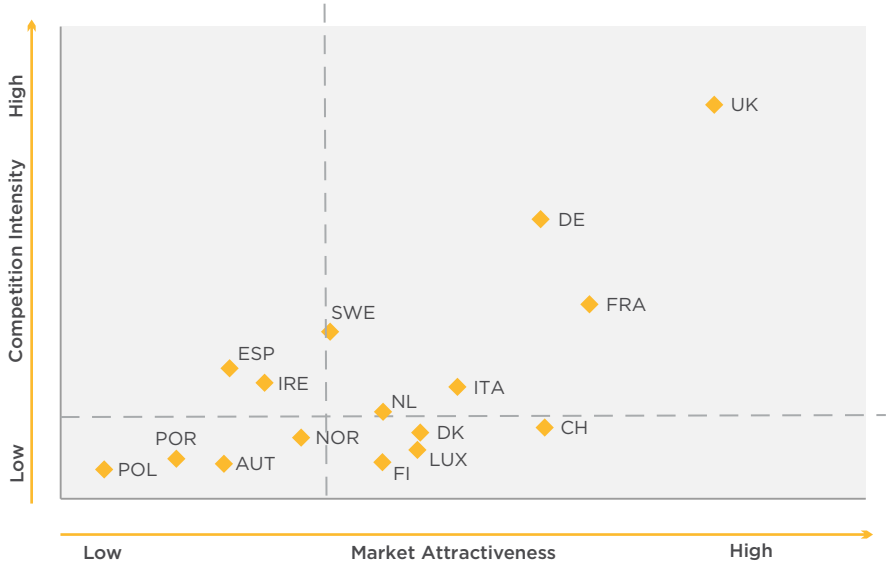
Source: WNS DecisionPoint™ Interview

HANDLE RISKS OPTIMALLY TO ACHIEVE HIGHER RETURNS

As discussed above, reducing risks could boost shareholder returns for P&C insurance but may trim the gains for L&H players. Insurers in the EU insurance market have relied heavily on cash flow underwriting during the last few years wherein the insurance products are priced well below the expected losses and expenses to be incurred. The aim of this strategy is to garner market share and create larger investment pool and then invest in vehicles providing higher rates of return making up for the differences in lower pricing. Testament to the aforementioned approach is that top 20 public insurers have reported average underwriting efficiency ratio of 116 percent during the last five years[ii]. Many insurers are resorting to risk-based pricing in response to Solvency II. However, given the commoditized nature of insurance products and intense competition prevailing in the European Insurance sector, the strategy of risk-based pricing may not yield desired results. On the other hand, resorting to vehicles/investment assets expected to provide higher rates of return will lead to higher capital requirements as market risk rises. Hence, insurers should carefully weigh underwriting risks and market risks based on the geography they operate in, considering the competition intensity (CI) and the market attractiveness (MA) as highlighted in Exhibit 26 and 27. WNS DecisionPoint™ studied 16 countries (in overall insurance market including P&C, L&H as well as Multi-Line insurance) in Europe to understand where they fit in each of the above categories.

EXHIBIT 26

Relative Risk Return Matrix by Countries



Source: WNS DecisionPoint™ Analysis; CI is based on the number of insurance companies in the country; UK's CI has been normalized due to being an outlier; MA has been calculated based on the Premium Amount and Insurance Density (Per Capita Insurance Premium); Analysis includes both L&H and P&C insurers; Data points have been taken from Insurance Europe for 2014; Dotted lines represent median values

[ii]till FY14/FY15 as per available data

EXHIBIT 27

Key Strategies When Weighing Underwriting and Market Risks

High CI	▪ Reevaluate business risks and harvest before divesting/sell-off ▪ Use funds from harvesting /divesting to invest in attractive markets	▪ Cash flow underwriting to retain/garner more market share ▪ Optimize operating costs to offset potential losses from cash flow underwriting ▪ Enhance customer experience
Low CI	▪ Focus on creating awareness to enhance insurance usage ▪ Up-sell and Cross-sell ▪ Enhance customer experience	▪ Risk-based pricing to maximize cash flow ▪ Enhance customer experience
	Low MA	**High MA**

Source: WNS DecisionPoint™ Analysis

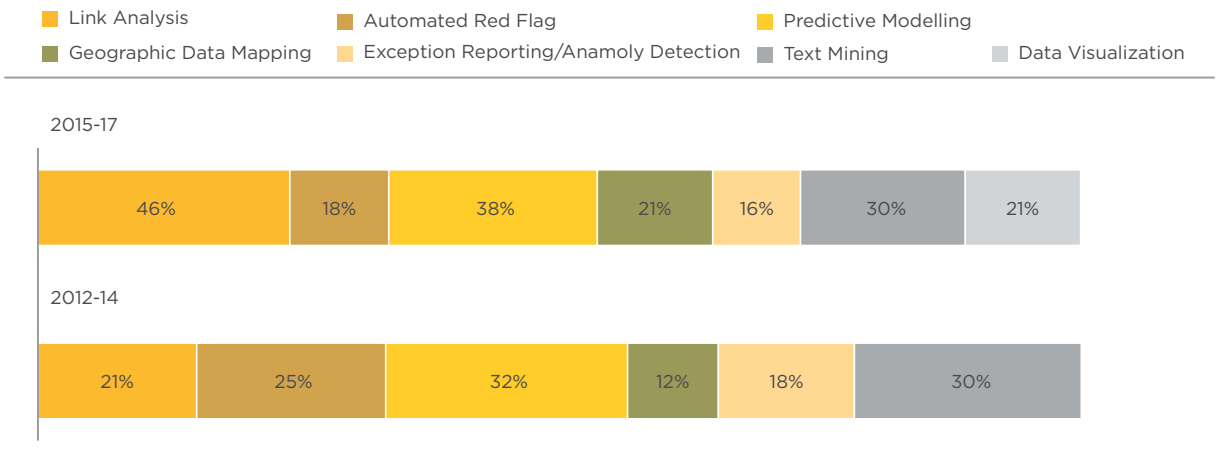
To win in this stringent regulatory environment, companies need to continuously track competitor activities and redesign their strategies and tactics, accordingly. In addition, insurers should focus on understanding customer behavior and preferences to provide a personalized experience and reduce underwriting risks (such as fraud). The path to effective personalization, detection of fraud and streamlined underwriting processes lies in adoption of data analytics, which can provide a much more comprehensive view of the customer to the insurer than was available before. This is because of the availability of improved and new technologies (Big Data storage, processing and visualization) which integrate information from different sources more accurately and quickly.

Companies are making investments in big data technologies such as Hadoop to process both structured and unstructured data. There is likely to be a growing use of automated tools to detect patterns in unstructured data. Meaning Based Computing (MBC) is one such tool which recognizes all forms of unstructured data. Next-generation MBC technologies connect various data formats (audio, video, emails, tweets, comments etc.), recognize relationships and concepts, and then send trigger actions across all customer-facing channels. These types of automated tools use various techniques such as text tagging, annotation, ontology and so on to provide standardized and processed information at speeds demanded by end users and business processes and help reduce risks.

As discussed earlier, insurance firms are also using structural modeling techniques (for accurate prediction of catastrophes and pandemics) and big data analytics for risk-based pricing. Insurers are also focusing on detecting and preventing fraud with the adoption of big data analytics. As per Insurance Europe, detected and undetected fraud is estimated to account for up to 10 percent of all claims expenditure in Europe. Apart from using advanced analytics tools to minimize the losses from fraud, EU insurers are exchanging information and extending co-operation with law enforcement agencies. Commonly used data analysis techniques adopted for fraud detection and minimization along with their future adoption have been depicted in Exhibit 28.

EXHIBIT 28

Adoption of Fraud Detection Techniques by Insurance Firms Using Big Data



Source: The State of Insurance Fraud Technology Report, 2014, by CAIF and SAS, Sample Size = 42

Insurers have also partnered with specialist service providers, who proactively identify emerging fraud patterns through predictive modeling, link analysis and other various advanced techniques or combinations of analytical techniques. Common benefits reported by insurers have been improvements in referral time, a greater number of referrals, reduction in investigation time and lower investigation costs apart, from reduced fraud. For more details on detecting frauds efficiently and effectively, please refer "Insurance Fraud Detection and Prevention in the Era of Big Data".

On the customer experience front, insurers should consider the following four elements when designing the customer experience:

- Customers and distributors including agents, brokers, employers, individual consumers etc.
- Customer-touch-points such as smartphone apps, agents, claims adjustors, website, brokers, contact center representatives etc.
- Interaction types (buying journey) covering requesting information, submitting claims, receiving or comparing quotes, making a payment etc.
- Drivers for purchase/drop-out such as unsatisfactory, claims handling experience, pricing, brand image

Understanding and studying these parameters and cross-analyzing them with customer segmentation based on psychographic, demographic and financial attributes will generate unique insights. Such insights help carriers provide the right information /product via right channel to the right customer at the right price and, therefore, aid in reducing the underwriting risk. Let us look at an illustrative segmentation by age group for a life insurance company in the UK in Exhibit 29:

EXHIBIT 29

Illustrative Segmentation Insights

Age Group	25-40 Years
Segment Size	37 Percent of the Entire Population (UK)
Average Income	£75 K Per Year
Savings	£50 K
Financial Objectives	Risk Cover + Retirement Planning
Preferred Channel to Buy and Gather Information	Website/Smartphone Apps
Preferred Channel to Share Feedback	Social Media
Drivers for Purchase	Brand Image + Price
Reasons for Drop Out	Price + Claims Handling
Buying Points Age	26 (Risk Cover); 33 (Additional Risk Cover); 39 (Retirement Planning)

Source: WNS DecisionPoint™ Analysis

OPTIMIZE OPERATIONS AND LEVERAGE DIGITAL TO REDUCE COSTS

In order to reduce risks and lower capital requirements, insurers are building balance sheet strength by reducing duration mismatch and restructuring their business model.

Many insurers are optimizing costs and simplifying their business model to offset reduced pricing on account of competition and also lower reinvestment risk due to prolonged low interest rate environment. The table below highlights the top strategies adopted by select big insurers in the recent past.

EXHIBIT 30

Controlling Costs to Offset Potential Losses

	Cost Savings Initiatives	Restructuring Comments	Digital Transformation Initiatives
AXA	▪ Saved €1.9 billion during 2011-2015 by maintaining P&C and LA&P administrative costs and reducing P&C acquisition ratio	▪ Focus on P&C	▪ Spent €950 million on digital transformation initiatives during FY 13-15 including 15 percent on offer design, 34 percent on process automation, 22 percent on customer analytics and remaining on multi-channel distribution
Delta Lloyd	▪ Achieved 37 percent operational expense reduction in FY15 and over past six years ▪ Aims to shave off 10 percent more from operational expenses by FY18 › Reduction of costs will continue along four themes i.e. IT legacy reduction, straight through processing, digitalization and online servicing	▪ Focus on growing fee business and expanding asset management	▪ Introduced an innovative fraud detection system called 'Sjerlok', which combines big data, artificial intelligence and detective work to search the Internet for missing or stolen objects ▪ Created a new business unit called Customer, Brand & Digital, that brings together commercial and product divisions in one central team to identify opportunities and accelerate the time to market for new products
Allianz	▪ Intends to achieve recurring productivity savings of at least €1 billion per year by 2018 primarily via digital transformation	▪ Further shifting new business towards unit-linked and capital-efficient products, and increasing the share of protection and health business	▪ Has been making an investment of €650 million per annum in digital transformation ▪ Establish a nationwide digital insurance company in China with Internet company, Baidu ▪ Created new role of Chief Digital Officer, to foster digital transformation within Allianz Group ▪ Aims to increase the share of new digital products in P&C retail and SME from 10 percent in 2015 to 100 percent by 2018

Source: Companies' Annual Reports, Investor Presentations, Transcripts

Cost optimization seems to be high on the priority list of insurers as per Exhibit 30. In our experience, key reasons for cost over-runs in an insurance organization happen mainly because of high business complexity owing to

- A multitude of products, brands, core processes and distribution channels
- Disparate back-office/back-end functions spread over numerous locations
- Fragmented IT landscape with legacy systems

Growth plans including mergers and acquisitions and geographic expansions are key factors leading to higher business complexity. To manage the business growth without increasing risks, firms need to simplify their business processes and limit the number of products based on the value they offer to the customers and their profitability levels. Insurance firms should stop issuing products with low customer value and low profitability. Areas such as underwriting, closed-book operations, claims management, CRM and policy administration should be centralized into one target system to enable straight through processing. Cloud computing should play a critical role in the modernization of these systems particularly those related to policy administration, claims management, and billings and payments.

Insurance firms are also leveraging other digital technologies (such as big data and analytics, mobility and social media) to optimize operations and reduce risks. Digitalization is not merely a tool to streamline internal processes to achieve operational efficiency; rather, it is a multidimensional change permeating innovation in products, services, processes, and business models and reshaping the customer experience journey design. Insurers can enhance customer centricity and become their partner of choice by creating fully modular products that can be explored and purchased online and enabling management of the claims process via an app. Exhibit 31 highlights key uses of digital technologies across the insurance value chain.

EXHIBIT 31

Use of Digital Technologies across the Insurer's Value Chain

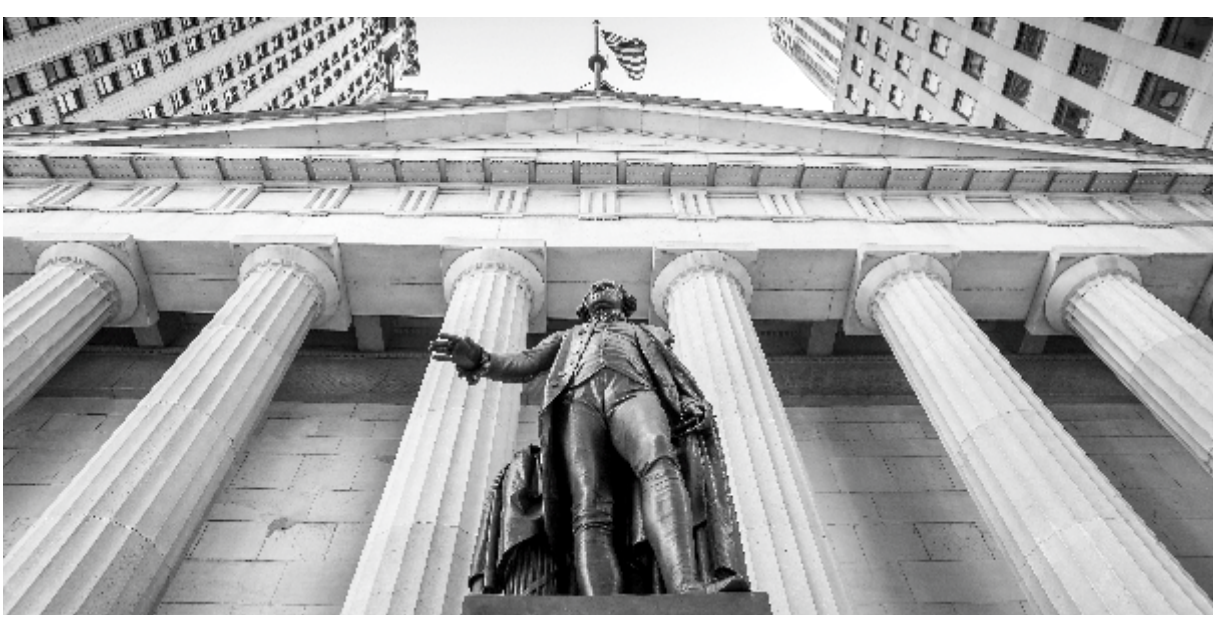
Product Design	Pricing/ Underwriting	Sales and Distribution	Claims Management	Policy Administration and Servicing
▪ Easy purchase and use journey ▪ Customer centric offerings based on needs and expectation ▪ Customized covers	▪ Automated underwriting ▪ Harness big data for better › Pricing of risk › Reserve accuracy › Detection of fraud	▪ Use Social Media for › New products and services › Branding, information, distribution and customer education › Cross-Selling/ Up-Selling › Micro segmentation ▪ Seamless omni-channel experiences	▪ Self service ▪ Claims estimation via apps to be used by on-site loss adjusters	▪ Leverage digital channels to co-opt post sales activities › Coverage verification › Policy administration

Source: WNS DecisionPoint™ Analysis

SENIOR EXECUTIVE SPONSORSHIP IS A MUST FOR MANAGING GROWTH IN TOUGH ENVIRONMENT

If the insurers are unable to maintain sufficient growth and are generating utility-like (low) returns, capital will flow out of their businesses and into the hands of outperforming competitors and other attractive sectors. To manage growth successfully post Solvency II implementation, insurance companies can adopt measures as described above. While some of the companies are already making efforts in order to successfully manage growth post Solvency II, the RR management should be optimal. Measures discussed above to achieve optimal RR will require business transformation and a robust change management programme involving system upgrades, divestments of low value products and lines of businesses, spin-off/closures of operations in unprofitable countries and leadership commitment. Companies also need to infuse analytics within decision making (related to risk) processes to manage and monitor risk, and assess capital requirements. Analytics tools and technologies aid in performing complex calculations to anticipate risks along with identifying the current risk hotspots across the organization. This helps in computing capital adequacy and taking control measures to satisfy capital requirements. Insurance carriers should also opt for external help mainly via partnerships with third-party outsourcing vendors and consultants.

Insurance companies' budgets might have been strained particularly after complying with the Solvency II regulations. Senior executives must necessarily commit investments to identify problem areas within their organizations and take measures to achieve the desired state of managing risks and returns. This is where the role of consultants and third-party service providers with deep industry knowledge will come into play. A strategic relationship with a credible partner is vital to optimize operations and reduce costs. Insurance firms need to continually benchmark, in terms of cost of operations and process performance measures, against peers to address operating model transformation, including significantly improved use of digital technologies, via adoption of best practices.



About DecisionPoint

Making key decisions that improve business performance requires more than simple insights. It takes deep data discovery and a keen problem solving approach to think beyond the obvious. As a business leader, you ought to have access to information most relevant to you that helps you anticipate potential business headwinds and craft strategies which can turn challenges into opportunities finally leading to favorable business outcomes.

WNS DecisionPoint™, a one-of-its kind thought leadership platform tracks industry segments served by WNS and presents thought-provoking original perspectives based on rigorous data analysis and custom research studies. Coupling empirical data analysis with practical ideas around the application of analytics, disruptive technologies, next-gen customer experience, process transformation and business model innovation; we aim to arm you with decision support frameworks based on points of fact. Drawing on our experience of working with 200+ clients around the world in key industry verticals, and knowledge collaboration with carefully selected partners, including Knowledge@Wharton, each research asset draws on "points of fact" to come up with actionable insights which enables 'bringing the future forward'.

References

I News by Bloomberg, U.K.'s Prudential Reports New Solvency Capital Ratio of 190 percent, 2016

Acknowledgments

a) Report by J.P. Morgan Cazenove, Solvency II - an uncertain risk but looks manageable, 2015

b) Survey by Ernst & Young, European Solvency II Survey, 2014

c) Report by KPMG, Evolving Insurance Regulation, 2014 and 2015

d) Reports from Munich RE Knowledge Series

e) Report by McKinsey, Successfully reducing insurance operating costs, 2015

f) Report by AT Kearney, The Insurance Challenge: Managing Complexity

g) Blue Paper by Morgan Stanley and BCG, Insurance and Technology – Evolution and Revolution in a Digital World, 2014

h) FAQ Document by European Commission, 'SOLVENCY II': Frequently Asked Questions (FAQs)

I) Office Journal of the European Union, 2015

DECISIONPOINT™
by WNS

A credible insights hub for companies looking to transform their strategies and operations by aligning with today's realities and tomorrow's disruptions.

Email: **perspectives**@wnsdecisionpoint.com
Website: wnsdecisionpoint.com

@**WNS**DecisionPt

WNS DecisionPoint

WNS DecisionPoint