

# fs viewpoint

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## ***The enormity of uniformity:*** How insurers can incorporate global rules and trends into local compliance



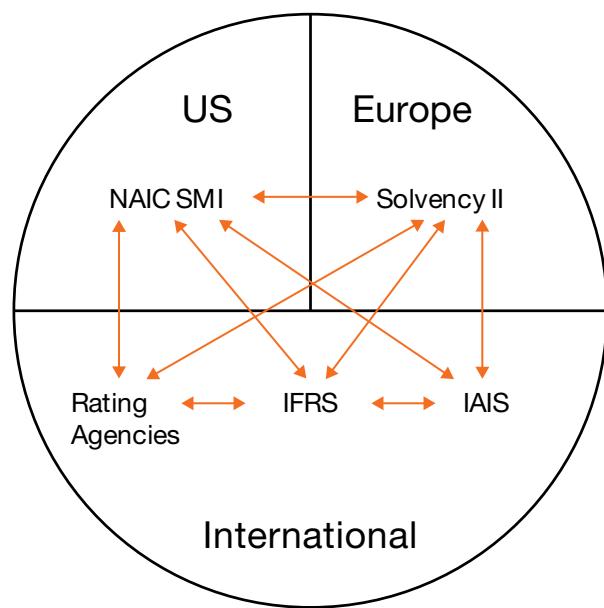
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## *Point of view*



**Regulatory regimes are communicating with one another and sharing information exchange and best practices at an unprecedented rate. This trend is raising the regulatory bar worldwide and impacting how insurers across territories choose to respond.**



What regulators consider “satisfactory” is changing, even for insurers that do not operate across international borders. Local regulators are looking to global standards to mitigate risks they see emerging within their own jurisdictions.

The following are key areas that regulators in various territories are focusing on:

**Solvency:** Re-evaluation of risk-based capital (RBC) formula to identify missing risks or current risks not appropriately handled, development of European RBC formula, approval for use of internal capital models in required capital requirement calculation, reform to credit for insurance models (including reinsurer accreditation and collateral reduction for trans-jurisdictional insurers), total balance sheet economic valuation, and capital quality criteria.

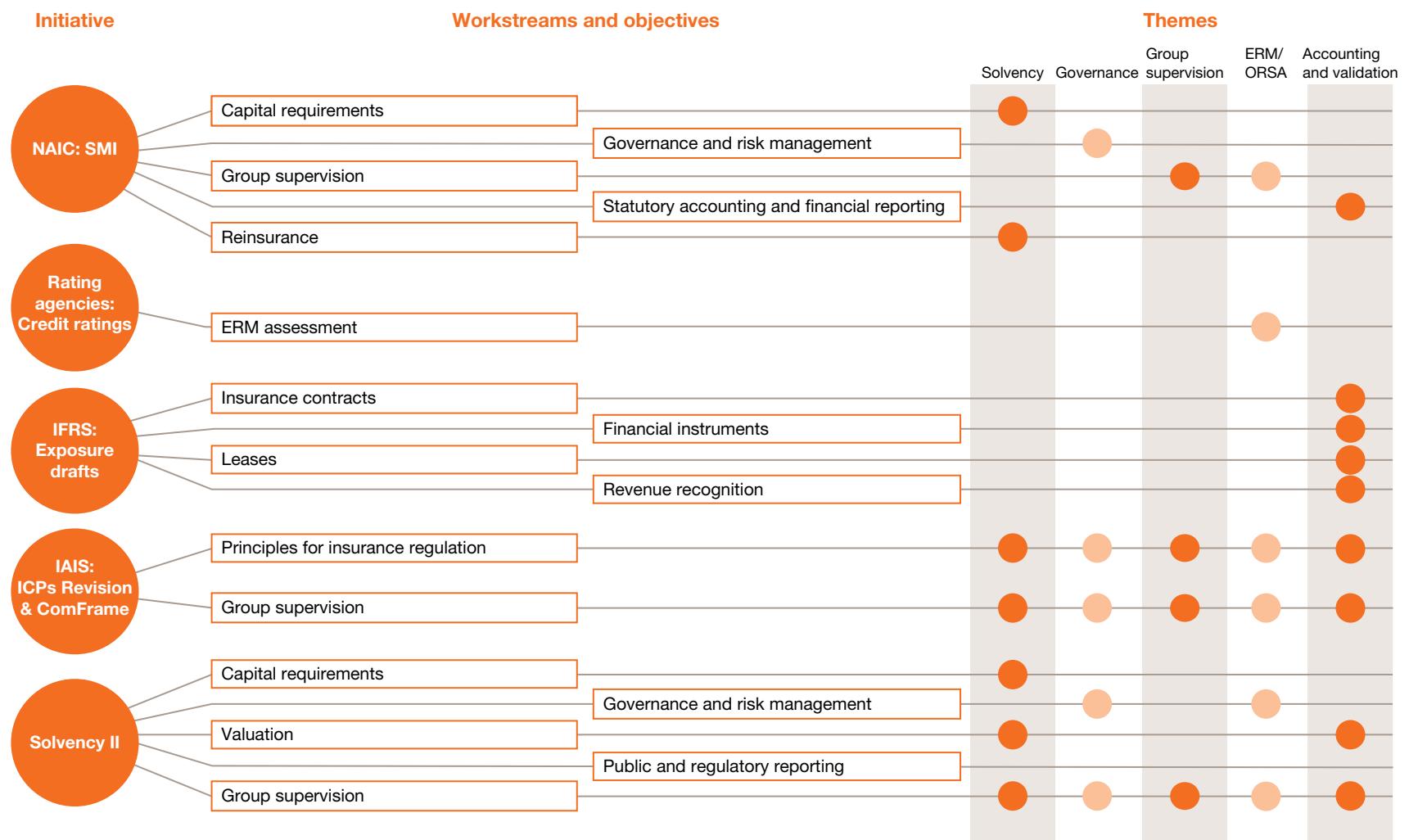
**Governance:** Improved assessment of group enterprise risk, development of the Own Risk and Solvency Assessment (ORSA) in many territories, enterprise risk management (ERM) requirements, and continued migration to risk-focused examination and review.

**Group supervision:** Enhanced colleges of supervisors, improved regulatory cooperation, and broadening of authority into groups/holding companies.

**ERM/ORSA:** New regulatory mandates being driven largely by post-crisis regime introspection, changing regulatory mindset looking beyond the legal entity, and increasing expectations for insurer risk management, including rating agency assessment.

**Accounting and valuation:** Development of principles-based reserving methodologies and ongoing development of IFRS.

**Many separate initiatives are driving regulatory change in various regulatory regimes around the world, but they address similar themes.**



**Rules are being finalized for many of these initiatives, and the US ORSA, in particular, presents a broad new regulatory mandate for US insurers that is due to be implemented before 2015.**

Since the ORSA encompasses an insurer's risk management practices at an enterprise level, it lays the groundwork for many of the other areas that need to be considered for regulatory compliance.

#### **How much change will the ORSA require?**

For some larger or leading insurers, the ORSA may be an extension of an already-established enterprise risk management framework and strategy. For those, the ORSA may not seem terribly burdensome.

For many insurers, however, preparing for the ORSA will be a challenge that requires significant preparation and organizational change. It will involve evaluating internal risk management practices at a granular level and identifying and addressing ERM program gaps, much earlier than the effective date given the level of change it represents.

For all insurers, irrespective of progress to date, the ORSA is expected to raise overall standards for risk management across the industry. Maintaining a market leading position may therefore require investment as others start to catch up.

**While the final details of the ORSA regulation are being finalized, leading insurers are taking advantage of the lead time to prepare now and minimize the potential for a last-minute rush down the road. For example:**

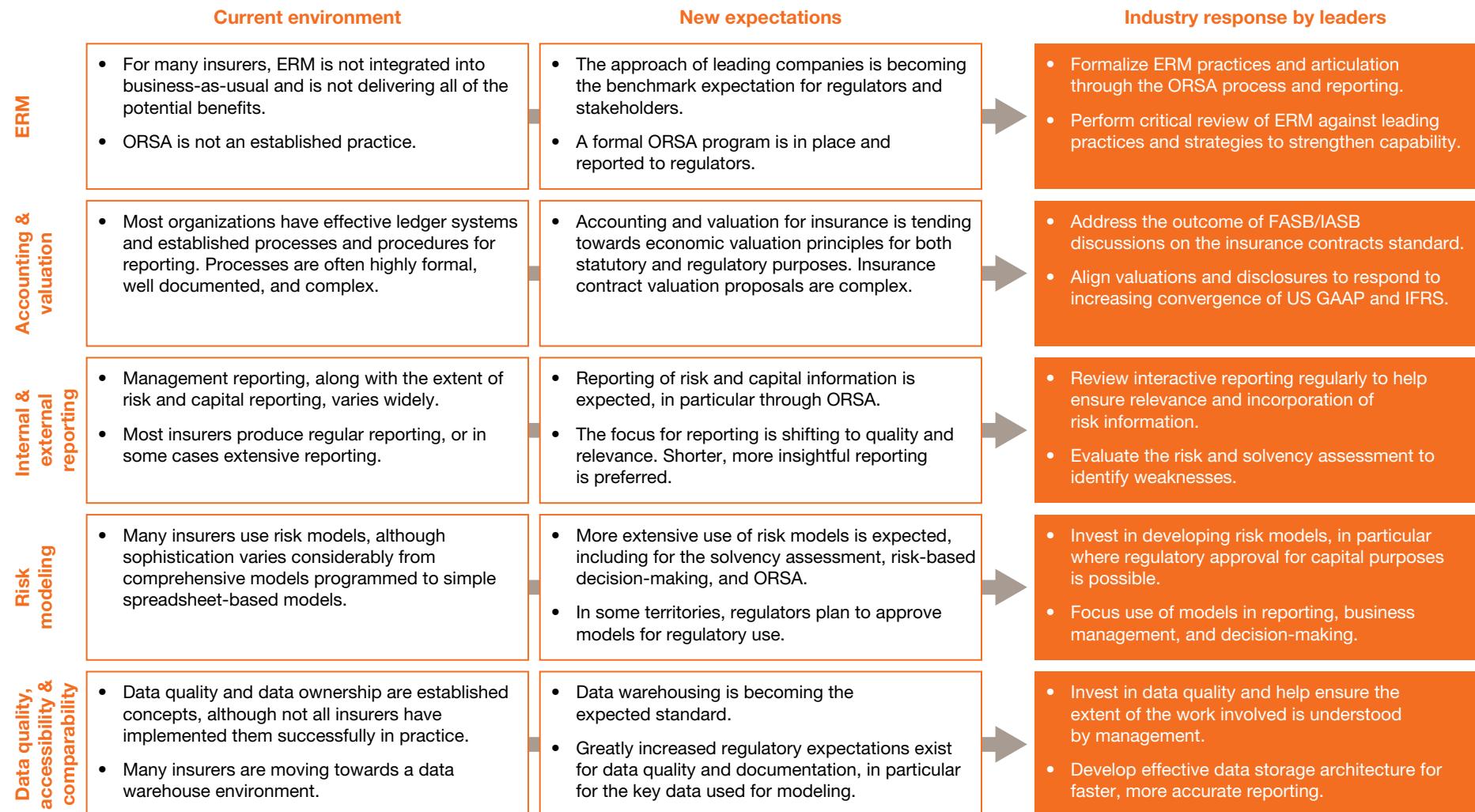
- Insurers will be required to assess risk and capital requirements for two-five years into the future. Many insurers are likely to need to invest in systems and data to support this process.
- Insurers will need to be able to articulate their risk management framework in terms of risk appetite/tolerance, risk profile, and consideration within business strategy. If this process is not already formalized, further work on the ERM process likely would be required.
- Insurers should be able to project their prospective enterprise-wide solvency and liquidity under stressed scenarios. This requirement has a host of implications and dependencies earlier in the value chain in order to make such a projection credible.

***Leading insurers recognize that consistent data quality, forward-looking risk models, and transparent reporting are not needed only to achieve regulatory compliance; they are essential tools for surviving and thriving in an increasingly complex landscape.***

The following are five areas of focus that senior management should consider when assessing their readiness for the new environment.

Enterprise risk management	Accounting & valuation	Internal & external reporting	Risk modeling	Data quality, accessibility, & comparability
<p>Is management considering enterprise-wide risk management when making decisions?</p> <p>Is the ORSA process regularly assessing the risk profile and solvency of the group?</p> <p>Is the risk appetite clear, specific, and aligned with board-endorsed corporate objectives while considering both maximum and targeted risk levels?</p> <p>Is the impact of current and emerging risks on existing controls and other risks assessed as part of a continuous, enterprise-wide process?</p>	<p>Is a single platform used for the accounting function, including internal and external reporting?</p> <p>Are adjustments between internal, statutory, and regulatory frameworks well understood and controlled?</p> <p>Are valuation and disclosures aligned between geographies and internal, statutory, and regulatory reporting?</p> <p>Are external performance disclosures aligned with performance measures and incentives?</p>	<p>Is risk management integrated with performance metrics through regular management and board reporting, including the ORSA?</p> <p>Does the company's internal reporting have a balance of automated reporting and flexible analysis and is it comparable across the company?</p> <p>Are management and the board reporting reviewed periodically for completeness and relevance?</p> <p>Are new information and perspectives identified and provided through innovative reporting?</p>	<p>Are results from risk models used as part of management reporting and decision making—including the ORSA process—as well as for external disclosures?</p> <p>Is management's feedback on the scope, strengths, and overall use of models solicited for continuous improvement?</p> <p>Are models developed in conjunction with business management being used for forward-looking and reverse stress testing, as well as sensitivity and scenario analyses?</p> <p>Is there a formal validation program that continually tests and improves upon models?</p>	<p>Is a data warehouse utilized and automatically interfaced with business systems to provide a single data source for internal and external reporting/business use?</p> <p>Do data quality programs set standards for completeness, accuracy, appropriateness, and timeliness?</p> <p>Are data owners identified and responsible for data quality?</p> <p>Is the use of judgment to augment or interpret data understood and controlled?</p>

## Leading firms are responding proactively to address new expectations from regulators, rating agencies, investors, and policy holders.

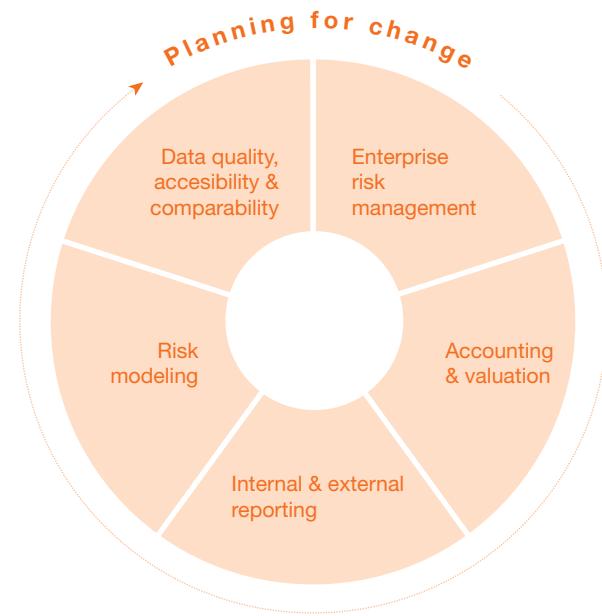


**Insurers that develop a strategic plan to address key areas will be better positioned to succeed in the new operating and regulatory environment.**

### Five key areas of focus

Leading insurers are responding to changes in the industry across the following five key areas of focus:

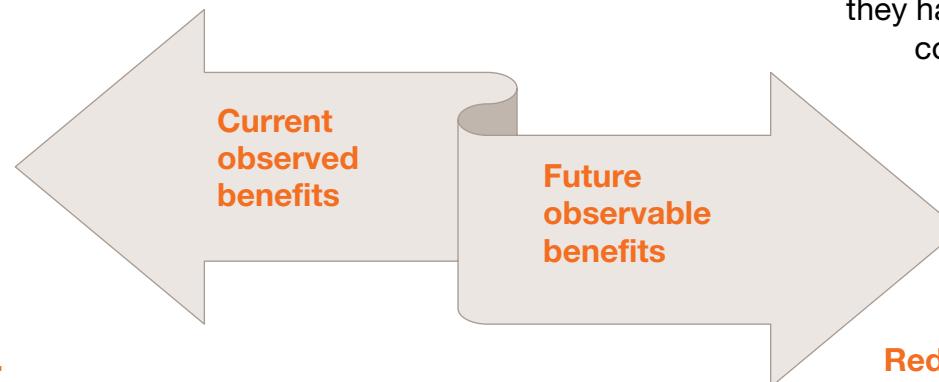
- Enterprise risk management program with a defined risk appetite and approach.
- Accounting and valuation on an economic value-basis, and adjustments between statutory and regulatory reporting.
- Internal and external reporting with a single platform and integrated risk information.
- Effective use of diverse risk models for strategic analysis.
- High quality data upon which reliance can be placed.



## **Regulatory change provides an incentive to invest in new capabilities. Leading insurers are using ERM, cross-business/functional analyses, and early planning to gain a competitive edge.**

### **Efficiencies and enterprise-wide consistencies.**

Developing a strategy at the planning stage allows for effective leveraging of work among business areas using an existing headcount. It is also an enabler for consistency, which is an expectation under coordinated, group-wide supervision and ERM standards.



### **More efficient use of capital.**

Risk modeling can provide a powerful strategic planning tool for insurers and can contribute to a more efficient use of capital—especially where capital is constrained—allowing firms to communicate a powerful message of the value generated to the market.

Through effective planning and the implementation of sound risk management tools and processes, insurers can realize both immediate and future benefits in the evolving regulatory and operating environment.

### **Less intensive supervisory review.**

Regulators plan to assess insurers' ERM programs and ORSAs as part of the financial examination process. Greater reliance on an insurer's own processes and less intrusive financial exams are a possibility for firms that show that they have effective understanding and control over their own risk profile.

### **Reduced capital requirement and improved credit rating.**

Regulators will be more receptive to capital reallocation/deployment by the more advanced and prudent managers of risk. For example, in Europe, obtaining approval for a capital model could reduce an insurer's regulatory capital requirement. Additionally, a strong or excellent S&P ERM rating could improve an insurer's credit rating worldwide.

**Insurers should seize opportunities for developing an efficient and effective response to regulatory change—and the sooner the better. Those that fail to take a proactive approach may face costly and complex implementation challenges.**

For many insurers, the industry will change significantly in the next few years. Developing a strategy to deal with regulatory change as part of the organizational planning process, will allow for a coordinated and efficient response.

Although regulatory initiatives underway will impact insurers differently based on the territory, they share foundations in common themes. To plan effectively, insurers should understand how each of the initiatives will impact them and design a response that addresses the needs of multiple stakeholders.

For global insurers, the planning process is particularly important to avoid having business units or legal entities in different territories responding individually to what may be common themes.

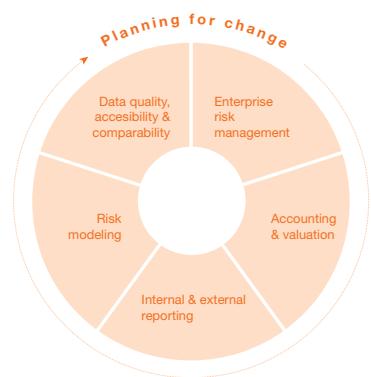
**Insurers with strong risk and capital management processes can benefit from the new regulatory environment.**

Making the most of the opportunities and challenges presented by regulatory change will require robust analyses, including meaningful quantification, ranking, aggregation, and reporting of risk, and an understanding of diversification and correlation at multiple levels within the group. Stress, scenario, and sensitivity testing, as well as the integration of forward-looking capital assessment and stress testing into business planning, will also be required.

*Significant change is always challenging—a comprehensive plan will help insurers avoid the following common and potentially costly pitfalls as they adapt to the new environment:*

- For global insurers, a narrow plan may miss similar regulatory requirements across territories. In addition, efficiency is decreased if work performed in one territory is not leveraged in others.
- For all insurers, change will impact many parts of the organization; without effective planning, dependencies may be discovered too late.
- Developing regulatory requirements must be kept front of mind, otherwise effort may be wasted later as requirements are finalized.
- Realistic resource planning is required to keep a project moving and on track, and the need for change management and communication should not be underestimated.

## *A deeper dive into the five areas of focus*



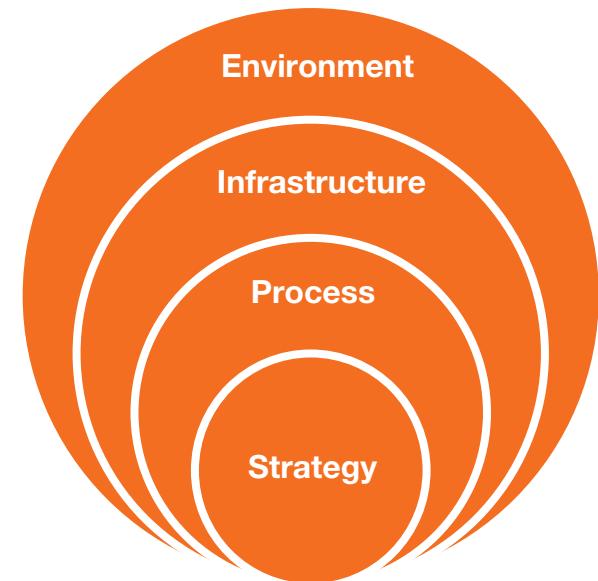
***Evolving expectations from rating agencies, analysts, and investors are contributing to the raising of the bar for enterprise risk management (ERM) execution.***

ERM is an increasingly critical determinant of an insurer's competitive viability, cost of capital, and ability to sustain stakeholder confidence.

Boards and senior management are looking for ERM to help them strike the right balance between risk and reward amid mounting competition and a more volatile risk climate. The design and development of a successful ERM framework promotes risk awareness in the following four dimensions:

- **Environment:** Successful ERM needs strong buy-in from risk takers in the business. Management therefore needs to assess how relevant ERM is to the culture and priorities of its particular organization and how far to go in making ERM a fundamental element of managing and operating the business.
- **Infrastructure:** ERM relies on an insurer's systems and reporting, along with the limits, controls, and methodologies through which ground-level risk management objectives are set, monitored, and enforced as part of a consistent and comprehensive portfolio view of risk.
- **Process:** Insurers need to be proactive in ensuring that talent is a key part of strategic planning, and should work with academic and professional bodies to help ensure that skills and qualifications are appropriate for both current and future needs.

- **Strategy:** Companies are finding it difficult to define and articulate their risk appetites in a way that can be translated into tangible limits, objectives, and priorities on the ground. These difficulties may be compounded by the fact that short-term profit considerations rather than risk-adjusted measures tend to be the primary performance objective within many participants.

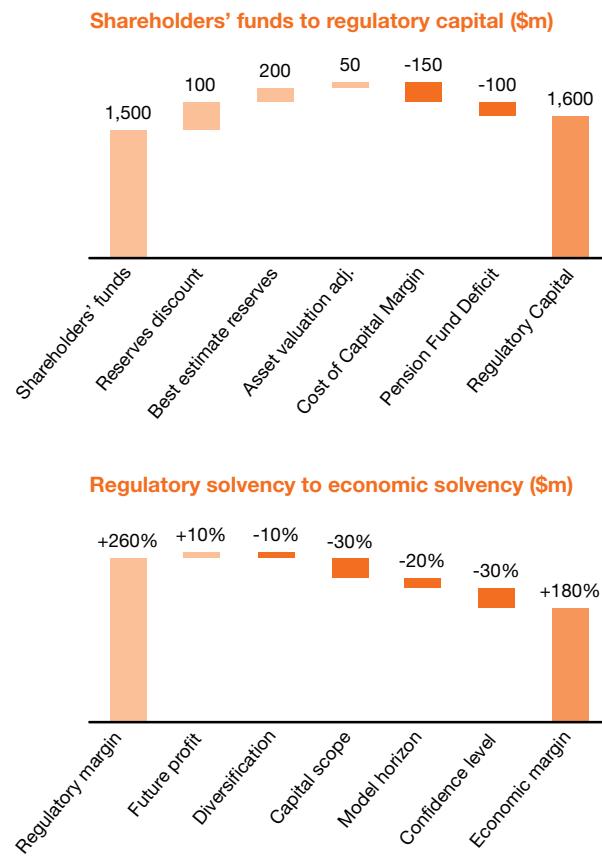


***An effective ERM program aims to provide the necessary checks, communication, and risk-informed decision making to achieve the right balance between risk and reward.***

## Accounting and valuation

**The reconciliation between statutory valuation reporting and regulatory or economic reporting is a key tool for insurers to deploy capital effectively and manage solvency.**

Understanding the valuation adjustments between statutory reporting and the regulatory or economic reporting is essential for informed decision-making.



Above are examples of potential outputs showing differences among regulatory, economic, and statutory reporting that insurers could integrate into management reporting.

For many insurers, complex differences between the accounting and solvency positions include valuation differences, items ineligible for solvency, diversification restrictions, tiering limits, variation in prudential filters, adjustments across territories, and the impact of non-transferable capital.

Management decisions can impact solvency in unexpected ways, and many insurers experience solvency problems as an unintended result of unrelated decisions. A reconciliation of the statutory and economic or regulatory solvency positions shows the drivers of the solvency valuation; fully integrating this viewpoint into decision-making will help management to identify inefficient use of capital and improve the capital strategy.

Effective capital management can produce significant value for insurers, freeing up capital for expansion or acquisition and improving return on capital. Incorporating capital metrics into management reporting can help insurers to manage their solvency and deploy capital on a proactive basis.

## Internal and external reporting

***As regulators and other stakeholders increasingly expect an enterprise-wide perspective—adding a new level of strain to finance and reporting functions—insurers should demonstrate that they understand, report, and manage the business on this basis.***

Using a single platform for valuation and reporting across a group will ultimately lead to efficiencies and will ease the strain on resources and processes.

An enterprise-wide approach to risk management and group supervision will be most effective with a single platform for valuation and financial reporting.

Currently, many groups with a global perspective use different valuation and reporting bases for different purposes, which may result in the production of published information (e.g., financial statements) using multiple frameworks. Further complicating the process is the reliance on multiple levels of manual analysis in many *internal* and *external* reporting processes.

Communication of financial and risk management performance on an enterprise-wide basis can be achieved through a consistent platform for valuation and reporting.

Developing and implementing a single reporting platform that can be used throughout the group will allow insurers to reduce or eliminate duplication and consolidate processes. Efficiencies may allow groups to meet increasing expectations for disclosure using existing headcount.

## Risk modeling

**Effective use of risk modeling can help insurers maximize their return on risk, manage their capital more efficiently, and drive competitive advantage.**

Risk models can provide management with powerful analysis and information for strategic and operational decision making—this is most effective when the outputs from a range of models are considered.

In our view, those insurers that make effective use of a range of risk modeling techniques may be better positioned to outperform those that do not have the same level of understanding of their portfolio and risk profile.

- **Risk modeling** can provide insight into the impact of planning, strategy, and day-to-day decisions that enable sophisticated management of the business and allows insurers to take advantage of potential opportunities and take early risk-mitigating action.
- **Decision-making** is most effective when a range of information is considered. Management should consider the different perspectives of a range of risk models to make fully-informed decisions.
- **Using models** outside of traditional applications can reveal a new perspective on risk that is useful for decision making. Most insurers have a variety of models available, including many of those shown to the right.

Risk modeling techniques	
Economic capital modeling	<ul style="list-style-type: none"><li>• Value at risk (VaR), Tail value at risk (TVaR), Time Horizon, Ultimate.</li><li>• Off-the shelf and bespoke modeling.</li><li>• Regulatory models (RBC, Solvency II Standard Formula, BSCR).</li></ul>
Catastrophe modeling	<ul style="list-style-type: none"><li>• Various vendors and levels of sophistication.</li><li>• Application outside traditional catastrophe risk (such as operational risk).</li></ul>
Systems behavioral modeling	<ul style="list-style-type: none"><li>• Sophisticated modeling and understanding of the interactions between model variables.</li></ul>
Rating agency models	<ul style="list-style-type: none"><li>• External perspective of risk and capital needs.</li></ul>
Regulatory capital models (RBC, Standard Formula, BSCR)	<ul style="list-style-type: none"><li>• Standardized and comparable capital calculation.</li><li>• Minimum level of capital to continue in business.</li></ul>

## Data quality, accessibility, and comparability

**Data should be high quality, comparable, and accessible across the group for an enterprise risk management approach to be effective.**

Insurers that stand to benefit the most from enterprise risk management and risk modeling will be those that understand the strengths and limitations of their data.

Completeness	<ul style="list-style-type: none"><li>• Data provides a comprehensive picture of the group.</li><li>• Gaps or areas of weaker data are understood.</li></ul>
Accuracy	<ul style="list-style-type: none"><li>• Data is free from errors that create a material distortion in model outputs.</li><li>• The impact of data error is understood, with proportionate tolerances set.</li></ul>
Appropriateness	<ul style="list-style-type: none"><li>• Data is relevant to the portfolio and a suitable basis for analysis.</li><li>• Biases that may distort the model output are understood.</li></ul>
Timeliness	<ul style="list-style-type: none"><li>• Data refers to a defined and consistent point in time.</li><li>• Data is up to date so analysis can meaningfully influence decisions.</li></ul>
Accessibility	<ul style="list-style-type: none"><li>• Data can be accessed in an appropriate format when and where needed.</li><li>• Reporting is largely automated with minimal manual analysis.</li></ul>
Comparability	<ul style="list-style-type: none"><li>• Data is consistent across the group allowing meaningful comparison.</li><li>• Comparable reporting can be produced at any level in the group.</li></ul>

*The six criteria detailed in the table support data quality initiatives for both regulatory and internal purposes.*

**Analysis and reporting** is only as reliable as the data supporting it. For insurers, it is critical to avoid inadvertent reliance on weak data for important decision-making. Data quality is dynamic and continually changing. To provide the required basis for decision-making, data must provide a solid foundation and be subject to ongoing review and control.

**Effective data storage architecture** can transform an insurer's ability to leverage data for analysis and decision-making.

**Data accessibility and comparability** is particularly important for groups that are challenged by aggregation across business lines or entities. Effective data storage architecture allows fast and accurate reporting across the group, generates efficiencies in the reporting process, and provides more reliable, insightful, and useful internal reporting.

## ***Competitive intelligence***



*Our observations of  
industry practices.*

**The following table sets out three examples of current market practices in relation to the areas identified in the Point of view section.**

Our observations of market practices among international insurance groups			
Area of focus	Insurance group A	Insurance group B	Insurance group C
Enterprise risk management	<p> A risk appetite statement is documented and approved at the board level. The statement contains qualitative and quantitative operating corridors, and considers both insurance and non-insurance risk.</p> <p> Detailed underwriting limits consider gross and net risk exposure, and underwriters operate within a pricing range that includes a technical element. Clear procedures are in place to consider exceptions to limits.</p> <p> The chief risk officer (CRO) function is carried out by the chief operating officer (COO). Culturally, risk management is respected, but is sometimes seen as internal compliance, in particular by underwriting.</p>	<p> A risk appetite statement is approved at the board level. The company targets an overall return on capital, and has guidelines on the types of business it will write.</p> <p> A dedicated CRO heads the risk management function, reporting directly to the CEO. Risk management works closely with the business, and failure to manage risk is not acceptable.</p> <p> Insurance risk is the principal focus for the risk management function, and the potential for material risk does not usually arise in other areas.</p> <p> Underwriting is subject to limits with clear procedures to consider exceptions. However, no defined capital allocation is performed at a class-of-business level.</p>	<p> Management aims for a conservative, low volatility risk profile, and uses facultative reinsurance and hedging to de-risk large individual exposures where necessary, and catastrophe reinsurance for aggregate exposures. The primary focus for risk management is insurance risk. Operational risk is not considered material.</p> <p> Responsibility for risk management is shared. There is no dedicated CRO, so the role is shared between the compliance officer and the head of underwriting.</p> <p> Underwriting guidelines are in place and revised by the board as it considers necessary. However, pricing is predominantly market driven, with quarterly reporting of underwriting statistics to the board.</p>

 Leading

 On Par

 Lagging

**The following table sets out three examples of current market practices in relation to the areas identified in the Point of view section.**

Our observations of market practices among international insurance groups			
Area of focus	Insurance group A	Insurance group B	Insurance group C
Accounting and valuation	<p> Reporting is performed under several different frameworks. Consolidated results are manually prepared using spreadsheet-based reporting packs.</p> <p> For both statutory and regulatory reporting, the process and methodology for reporting has built up over time, with the same adjustments calculated and posted each year.</p>	<p> Reporting is performed under US GAAP and IFRS. Where possible, consistent valuation principles are applied across the group. Any required adjustments are posted to an adjusting ledger.</p> <p> Risk and economic capital measures used to manage the business at a portfolio level are explained and provided in external disclosures.</p>	<p> Reporting is performed under several frameworks using analysis performed on spreadsheets. Disclosures are rolled forward and updated each year.</p> <p> The accounting valuation and regulatory solvency valuation are aligned where feasible. Management understands all non-avoidable differences, and produces a reconciliation quarterly.</p>
Internal and external reporting	<p> Extensive risk management information is reported to the board including key risk indicators (KRIs) and risk-adjusted key performance indicators (KPIs), current major sources of risk, underwriting exceptions and risk management actions.</p> <p> Reporting is periodically reviewed to help ensure that it remains relevant, and is changed as necessary.</p>	<p> An interactive dashboard provides near real-time risk reporting, including risk profile by line of business and non risk-adjusted key performance indicators.</p> <p> Non-risk financial information is reported to support a standing agenda, and has been built up over time.</p>	<p> A regular reporting pack is produced for the board. The board's views on reporting are regularly sought and reporting updated to take account of feedback.</p> <p> Board reporting primarily covers financial performance information. Risk management reporting is limited, and solvency information is provided annually for regulatory purposes only.</p>

 Leading    On Par    Lagging

**The following table sets out three examples of current market practices in relation to the areas identified in the Point of view section.**

Our observations of market practices among international insurance groups			
Area of focus	Insurance group A	Insurance group B	Insurance group C
Risk modeling	<p>Dedicated VaR models analyze each line of business and associated correlations and diversification, and can operate at either group or legal-entity level.</p> <p>Models cover all those risks classified as material in the group risk register. The register is regularly reviewed and updated for emerging and developing risks, and models are updated as necessary.</p> <p>Models operate using several time horizons, including run-off, and the different perspectives are considered for decision-making.</p> <p>In addition to VaR models, management review the outputs of regulatory capital and rating agency models. Differing results are reconciled if necessary.</p>	<p>A variety of VaR models, both formal and spreadsheet-based, are used to analyze different parts of the portfolio to ultimate run-off.</p> <p>Model results can be assembled to provide a combined view of the principal elements of the portfolio. However, the ability to scenario test at this level is limited by the time taken to run the various models.</p> <p>The CRO has carried out an exercise to identify significant models, and these are reviewed / validated in a rolling cycle by internal audit.</p> <p>Models and their limitations are well understood by management, who are briefed on the outcomes of model reviews, proposed model changes, and consequent model developments.</p>	<p>Models are developed and used for analysis and internal reporting where a specific need has been identified. The majority of models are developed and maintained individually on spreadsheets.</p> <p>Models cover the major risks in the portfolio as identified by management.</p> <p>Diversification is considered to arise between lines of business. However, it is not specifically modeled as lines are managed separately, with no allowance for diversification, which is viewed as a safety factor.</p> <p>No standard suite of model outputs is produced on a regular basis. However, management can request specific scenarios to be modeled to inform significant decisions.</p>



Leading



On Par



Lagging

**The following table sets out three examples of current market practices in relation to the areas identified in the Point of view section.**

Our observations of market practices among international insurance groups			
Area of focus	Insurance group A	Insurance group B	Insurance group C
Data quality, accessibility, and comparability	<p> Data is held in a central data warehouse with an overnight interface to source systems. All reporting is produced from the warehouse, using a combination of standard and tailored reports.</p> <p> Data quality is formally owned by the IT function. IT has established data quality guidelines, which data entry staff must comply with. Quality metrics are produced and reported to data entry team management.</p> <p> All new data is subject to automatic validation at input, considering the accuracy of the content in addition to completeness.</p> <p> A data directory captures all key data, its characteristics, usage and source, and includes details of controls and quality metrics.</p>	<p> The majority of data is held in a data warehouse, with a small number of specific lines of business covered by standalone systems.</p> <p> Wherever possible, reporting is produced from the data warehouse. However, where data is housed outside the warehouse, data is extracted and input into the reporting system using a spreadsheet.</p> <p> Requirements for data quality have been defined by identified data owners. Requirements are based on the specific uses and sensitivity of individual data items. Testing is performed on a rolling cycle by internal audit.</p> <p> Data flow documentation covers all key data flows and controls.</p>	<p> Data is input into and held in a number of source systems. Generally, major lines of business have their own tailored systems.</p> <p> Reporting is produced by the finance function, using established procedures with which finance staff is familiar.</p> <p> Responsibility for data quality is shared across the organization. Data entry is responsible for inputting accurate data, and data users do a common-sense check of the data at the point of use.</p> <p> Documentation of data flows and controls is limited, and primarily exists where required for regulatory purposes.</p>



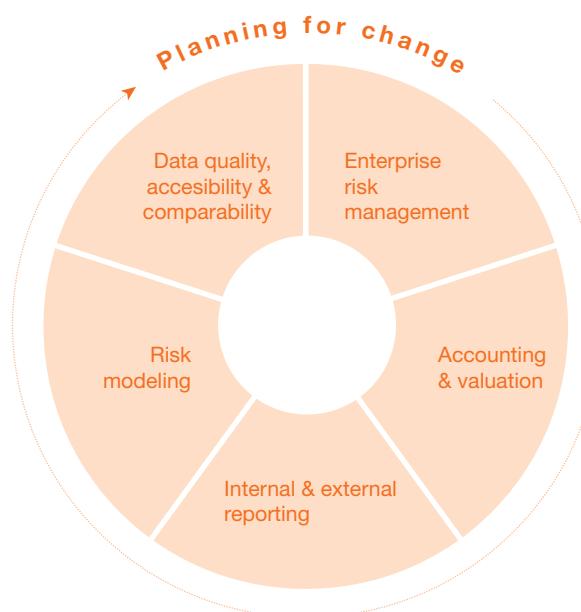
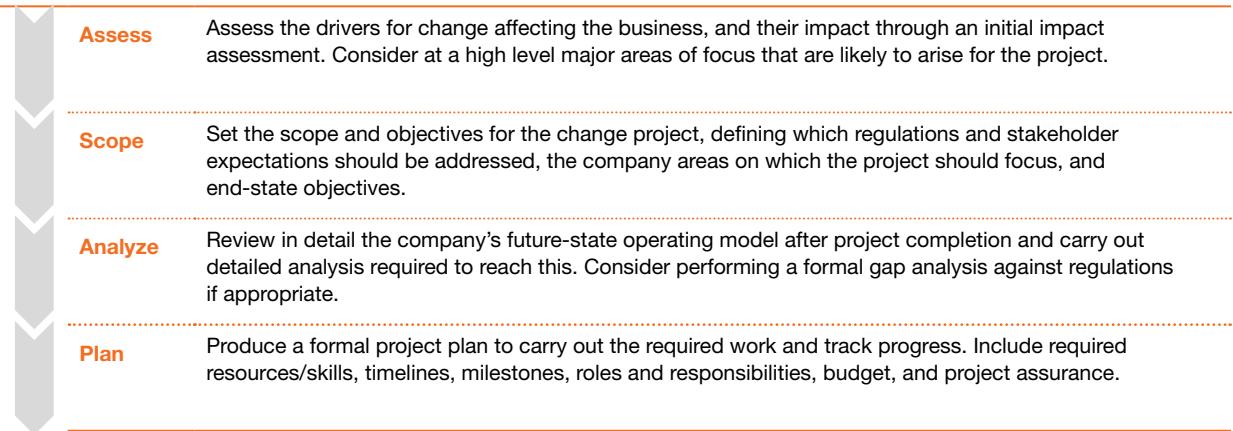
## ***A framework for response***



*Our recommended approach  
to the issue.*

**Defining objectives and creating a comprehensive plan effectively positions an organization as the industry responds to changing expectations of regulators and other stakeholders.**

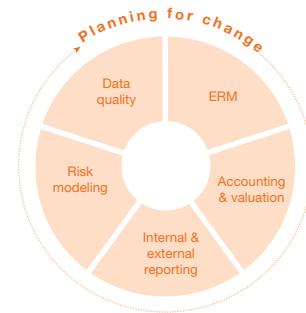
Process for responding to change across the five key areas of focus:



***Ultimately it is people who implement change; managing the human resources required to execute and oversee the transition is critical to successful project delivery.***

People affected by the changing landscape may include senior management, individuals within decision-making roles, and those involved in functions supporting capital and risk management (such as finance, actuarial, modeling, risk, compliance, and internal audit). Insurers need to make sure that management and staff have the necessary skills and knowledge to lead and enable change through communication, training and development.

For many areas of regulatory-driven change, an essential component of the project includes meeting formal requirements concerning documentation and reporting. Where regulation is not a driver, documentation can still be useful to record knowledge and mitigate key-person risk. A strong change management program is critical across all success factors so that the formal processes and controls are in place.



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**The following factors create the conditions for successful change:**

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Build consideration of people and change explicitly into the project plan.

- Provide time to engage with management and staff to discuss change, making sure that people know what the changes will be and how they will personally be affected.
- Help ensure that management has the skills to lead and implement change with clearly defined roles that establish accountability.
- Assess the skills and resources necessary to implement change and provide training if necessary to develop management and staff.

Ensure that the benefits of change are measureable and kept front-of-mind.

- Identify key performance indicators early on to define what success looks like.
- Continuously measure, report, and re-assess the plan as needed.

Create a formalized documentation policy.

Consider the following key factors in creating a formalized documentation policy:

- The level of detail required by the user.
- The nature and frequency of review and update—defined documentation levels can be used effectively.
- Documentation format, storage, security, approval and version control.

## **Designing an effective enterprise risk management (ERM) approach involves an insurer thinking about its attitude towards risk, and the approach to managing risk.**

Enterprise risk management focuses on an organization's approach to risk, and its ability to identify, measure, manage and report risk. Defining the risk appetite and how the risk profile will be assessed is key to ERM, and debating and agreeing these points at the board- and senior management-level is an effective starting point for building the framework.

An ERM framework can be implemented in many different ways, but the most important factor is to design a framework that mirrors the way the company operates and is managed. All frameworks have the same essential steps of defining risk appetite, identifying, measuring and reporting risk, reporting risk profile to management, and managing risk, which includes both de-risking and accepting more risk where justified by the available return.



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### **A successful ERM framework requires the following four key elements:**

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Clear agreement of how much risk the company is willing to take

A comprehensive understanding of the risks that the insurer faces

Effective functional arrangements to manage, control and monitor risks on a day-to-day basis

Clearly defined roles, responsibilities and accountabilities

**The “Own Risk and Solvency Assessment” (ORSA) is a key component of enterprise risk management, combining an insurer’s risk and capital management frameworks.**

The ORSA sits at the center of insurance risk management.

While it is becoming a regulatory requirement in many territories, it fundamentally represents an insurers’ own process of internal risk and capital management.

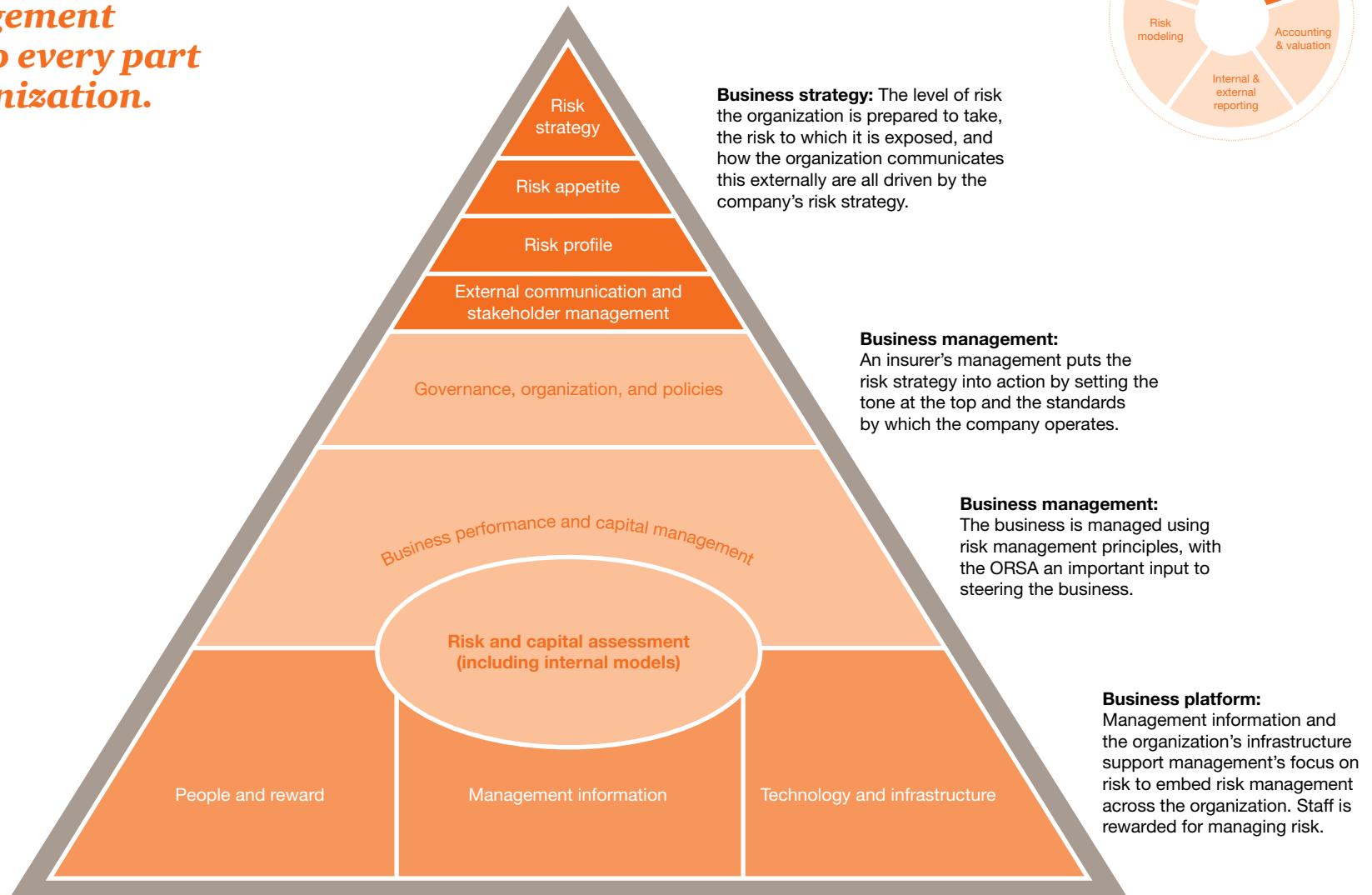


#### Key factors to consider for ORSA:

- To establish the ORSA, an initial focus on the reporting of the process can be helpful.
- Considering the ORSA as a process rather than a regulatory document helps crystallize how the assessment operates.
- The ORSA is an effective way to identify areas where either the process or its formalization and articulation to regulators and other stakeholders could be strengthened.

*Embedding an enterprise risk management approach brings the company's risk management culture into every part of the organization.*

An ERM framework starts with business strategy, has business management and risk and capital assessment at its heart, and is supported by the business platform.



**Regulatory change may have a significant impact on insurers' balance sheets and capital positions in the future—analyzing the impact will help insurers to prepare.**

The following factors may impact the balance sheet and capital in the future.



#### Capital valuation

- Capital items
- Economic balance sheet adjustments
- Territory differences
- Group capital

#### Valuation differences

- Insurance contracts
- Regulatory adjustments and filters
- Variations between jurisdictions

#### Capital classification

- Capital quality and tiering
- Limits on use of types of capital
- Restrictions on capital fungibility and transferability, including ring fencing

#### Capital requirements

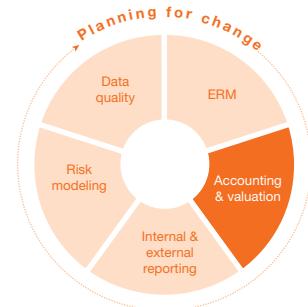
- Economic capital
- Prospective solvency assessment
- Regulatory capital—US and overseas
- Group capital

#### New disclosures

- Statutory disclosures
- ORSA and ERM reporting
- Holding company reporting
- Solvency II public and regulatory disclosure

**Developing an effective and robust reporting framework promotes a strong and consistent performance and risk message to external stakeholders.**

Key success factors for developing a robust reporting framework include the following.



#### *Communication*

Develop a clear communications strategy that enables consistent messaging to the market and to the regulator, effectively communicating the true strength and potential of the business.

#### *Accountability*

Utilize financial reporting, governance, and processes that set out clear responsibilities and controls.

#### *Consistency*

Create disclosures that closely mirrors management's 'business-as-usual' risk attitude, capital management, the ORSA and solvency positions with minimal manual intervention to deliver external reporting.

#### *Transparency*

Enhance disclosures so that they can be easily and regularly reconciled to other bases of reporting, such as IFRS and regulatory reporting, while enabling transparency and audit.

## **Management should incorporate the results from a range of risk models into internal reporting, providing new perspectives for decision making.**

Risk model results can be used for performance measurement and to support management decision making, helping to meet the Solvency II Use Test (where applicable). This requires that management demonstrate that an internal model is widely used throughout the organization including in the system of governance, risk management system, and the ORSA.

Incorporating risk model results into reporting contributes significantly to embedding modeling into day-to-day business practice, and for those insurers seeking regulatory approval for an internal capital model, is an essential step towards meeting the Use Test.

The following are examples of outputs resulting from successful integration of modeling with internal reporting, which help support decision making:

*The outputs from internal modeling can be tailored to meet the specific needs of individual insurers.*



### **Strategic decisions**

#### **Performance evaluation**

- Risk-adjusted return on capital (RAROC) and shareholder value added (SVA) brings more financial discipline to business decisions, both at group- and line-of-business level.
- Performance attribution measures how value was created, and relates back to capital investment in performance assessment.

#### **Strategic planning and capital allocation**

- Allocating capital across business units based on SVA objectives and expectations as well as strategic direction, creates a balanced and disciplined deployment of capital.
- SVA aligns incentives and influences all levels of staff to make decisions that deliver superior performance.

### **Tactical decisions**

#### **Portfolio management**

- The use of RAROC/SVA for product and customer decisions results in higher spreads on retained assets and the disposition of less attractive portfolios. For example, SVA discipline can discourage the retention of assets that do not generate a positive return above the cost of risk-adjusted capital.

#### **Risk-based pricing and customer relationships**

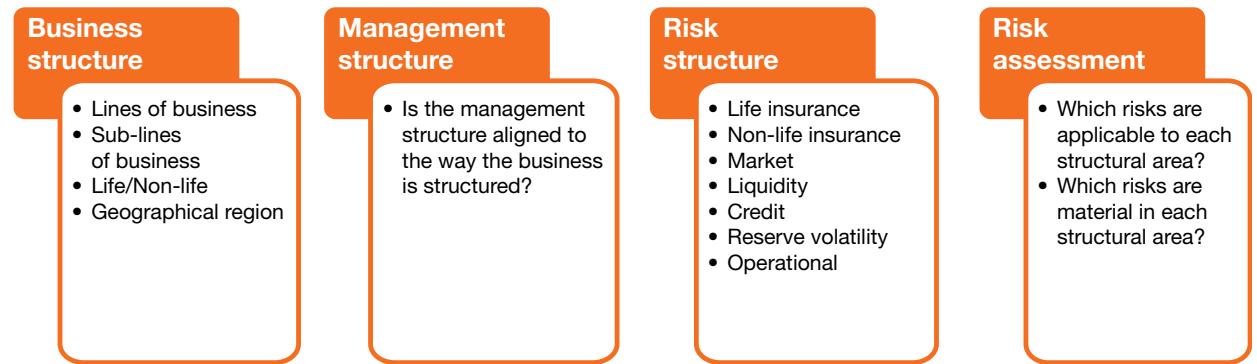
- Risk-based pricing helps manage the risk-return profile of lines of business on a product and/or customer level.
- RAROC/SVA supports analysis of customer preferences, risk, and profitability.

## **Designing an internal capital model to mirror the organizational and management structure of the business is essential for the model to be relevant.**

Determining the structure of the internal model and how it will align to the business is an important first step in designing the model. A structure that effectively represents the practical organization and management of the business is critical to making the model relevant and useful in the real world.

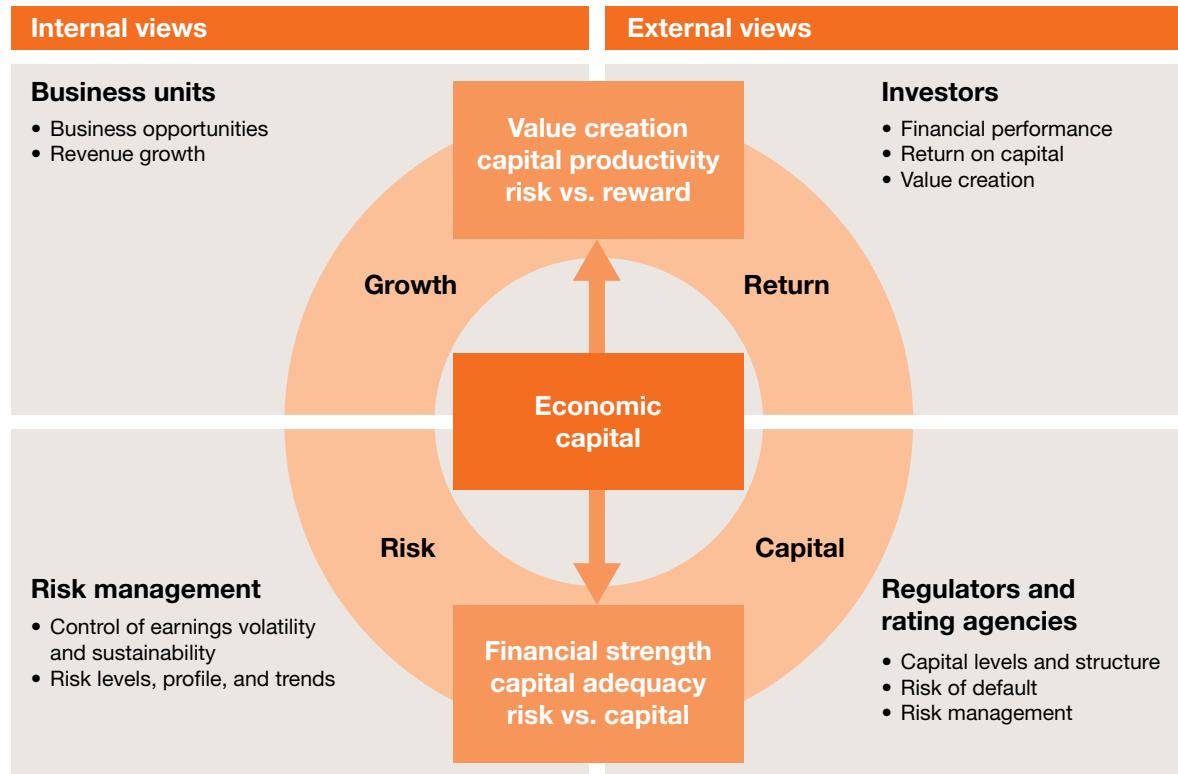
The risk measure, confidence level and time horizon used for a capital model should also reflect the nature of your organization's primary risks.

*The internal model should be an accurate representation of the structure of the business, the way that it is managed and the risks arising in each structural area, and should include all material risks.*



## An economic capital model should balance the needs of different internal and external stakeholders and business goals.

The use of an economic capital model will make it relevant day-to-day, and will help those organizations subject to Solvency II to pass the Use Test. An economic capital model can be applied across an organization and should be designed to provide value to all stakeholders. Therefore, it should balance internal and external views and the differing perspectives of its users.



## **The risk measure, confidence level, and time horizon used for an internal model should reflect the nature of the insurer's primary risks.**

The risk measure, confidence level, and time horizon selected for modeling may be affected by several factors, including regulatory requirements. For example, for insurers operating in Europe or Bermuda, 99.5% VaR over 1 year (Europe) or 99.0% TVaR over 1 year (Bermuda) are prescribed, and insurers must be able to reconcile model results to these measures.

However, beyond regulatory requirements, the risk measure, confidence level, and time horizon should be driven by the nature of the risks written by the company. Different risk measures provide varying perspectives, and the most informative solution may be analysis using multiple measures.

*The following risk measures are often used for capital modeling, and provide different perspectives.*



### **Value at risk**

- Single point on the distribution.
- Less complex calculation approach, but provides limited information on the full distribution.

### **TVaR**

- Calculates the average beyond the VaR.
- More complex calculation approach, but provides more insight into the tail of the distribution.

### **Time horizon**

- Any horizon can be used.
- The horizon should fit the way the business is managed. A longer time horizon can be less volatile, but one year may be a better fit for many.

### **Ultimate**

- Provides a run-off picture of the portfolio; however, the ultimate measure does not provide insight into volatility over the course of the run-off.

## **To implement a program to improve data quality, the first step is to establish the data used by the organization and the risks it poses.**

A data-quality framework requires a combination of overall data and IT governance, and detailed data-quality standards for specific key data.

A key part of the framework is to help ensure that it is demonstrable to regulators and other stakeholders, especially where the organization is subject to external review or examination. Documentation must therefore explain the scope of the data governance standards, the quality criteria that have been applied, and how data deficiencies are controlled, identified, and corrected.



*Developing a data quality program starts with the following six steps:*

1. Review and/or establish overall data and IT governance standards.
2. Identify key data to be subject to supplemental data quality standards.
3. Identify the risks to the data that has been identified, taking into account its use with the organization.
4. Determine the level of data quality required for the intended use, and specify data quality criteria accordingly.
5. Identify and/or establish controls to help ensure that the quality criteria are met on an ongoing basis.
6. Develop procedures to identify and remediate deficiencies where the data does not meet the quality criteria.

## Greater centralization and analysis of data storage and reporting architecture could simplify and speed up the reporting process.

Many insurers have used data profiling as an effective tool to provide high-level comfort on data quality.

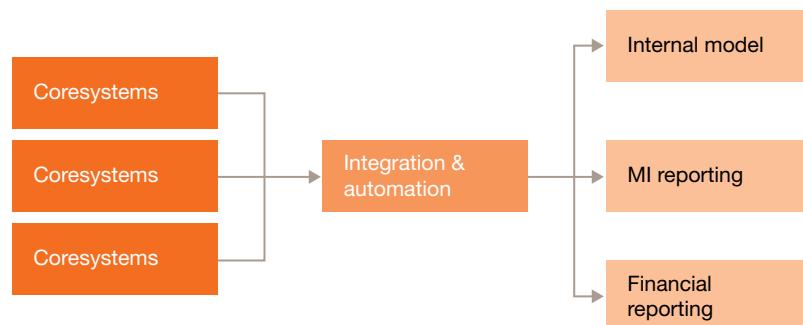
Data profiling can be used to show trends in data and to illustrate relationships between different types of data. It provides a high-level picture of a company's data, and can be used as part of a data testing program to help focus management's attention.

A more centralized data and reporting architecture increases the quality of internal reporting, and speeds up the internal and external reporting processes. This benefits insurers subject to proposed new reporting requirements under Solvency II in Europe, which are expected to require more in-depth reporting to be prepared under accelerated reporting deadlines.

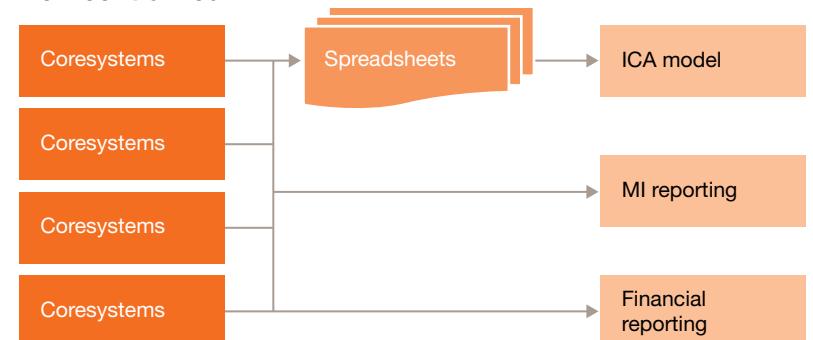


The following diagrams illustrate differences between a centralized and non-centralized reporting architecture.

### Centralized:



### Non-centralized:



## ***How PwC can help***



*Our capabilities and  
tailored approach.*

**PwC can help your organization to plan and execute across all the areas of focus in order to respond to regulatory change.**

Planning for change involves establishing a holistic understanding of changes, repositioning change as a strategic imperative, and integrating with other business initiatives to make change effective.



*Enterprise risk management:*

- Build a tailored risk management framework.
- Design and implement risk metrics.

*Accounting and valuation:*

- Advise on accounting and valuation transition and disclosures.

*Internal and external reporting:*

- Assess external communication for regulatory requirements .
- Design and structure internal reporting .
- Help to pass the Use Test.

*Risk modeling:*

- Implement new methodologies and support development of risk models.
- Develop an internal model validation framework.
- Leverage existing models for more comprehensive use.

*Data quality, accessibility, and comparability:*

- Design a data quality framework .
- Implement a new data architecture.

**As a starting point, an educational session, targeted workshop, or comprehensive impact assessment will provide clarity around the impact of regulatory change on your company.**

**PwC's approach to developing a change strategy**

Objectives	<ul style="list-style-type: none"> <li>• To understand the impact of regulatory and other drivers for change on your organization.</li> <li>• To define and develop your change objectives.</li> <li>• To develop with you an implementation plan with actionable recommendations.</li> </ul>		
Approach	<b>To define and develop your change objectives.</b>	<b>Targeted workshop</b>	<b>Impact assessment</b>
What is it?	<p>A two-to-three hour session to:</p> <ul style="list-style-type: none"> <li>• Develop a common understanding of changes affecting your company.</li> <li>• Jointly identify broad impacts across departments and business units.</li> <li>• Determine whether or not further study makes sense.</li> </ul>	<p>Targeted workshops, including the following topics, can supplement an educational session or be included in an impact assessment:</p> <ul style="list-style-type: none"> <li>• Enterprise risk management.</li> <li>• Accounting and valuation.</li> <li>• Internal reporting.</li> <li>• Economic capital modeling.</li> <li>• Data quality, accessibility, and comparability.</li> </ul>	<p>A series of detailed workshops over two-to-four weeks with key functional areas to:</p> <ul style="list-style-type: none"> <li>• Understanding in detail key developments and how they may impact your activities.</li> <li>• Work with you to define objectives.</li> <li>• Identify changes to policies, practices, processes, and systems.</li> <li>• Provide a basis for a strategic and tactical plan to manage change.</li> </ul>
Who participates?	<ul style="list-style-type: none"> <li>• Selected leaders from key functional areas and business units.</li> <li>• PwC risk, regulation, actuarial, accounting, reporting, data, systems, and other specialists.</li> </ul>	<ul style="list-style-type: none"> <li>• Selected leaders from relevant functional areas and business units.</li> <li>• Relevant PwC specialists, including risk, regulation, actuarial, accounting, reporting, data, and systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Broad group of management from key functional areas and business units.</li> <li>• PwC risk, regulation, actuarial, accounting, reporting, data, systems, and other specialists.</li> </ul>
What are the deliverables?	<ul style="list-style-type: none"> <li>• Summary of broad impacts.</li> <li>• Summary of potential areas for further investigation.</li> </ul>	<ul style="list-style-type: none"> <li>• Summary of high-level impacts.</li> <li>• Summary of high-level implications and recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>• Articulation of your objectives.</li> <li>• Summary findings, implications and recommendations against objectives.</li> <li>• Plan for next steps and rationale.</li> </ul>

## ***A highly experienced team with extensive global risk and capital capabilities.***

<b>Multi-disciplinary approach</b>	PwC regularly assembles multi-disciplinary teams of strategy, risk management, regulation, actuarial, data, technology, finance and accounting, operations, tax, and change management specialists that help insurers manage risk and meet capital requirements. In the United States alone, we are able to call upon over 1,200 industry-dedicated professionals, including over 150 who specialize in regulatory and risk and capital issues.
<b>Global reach</b>	We have a tightly integrated network of over 500 risk and capital professionals that has extensive experience working together to serve insurers in all major insurance markets. Clients benefit from our ability to provide them consistent service and quality wherever they do business, whenever they need our assistance.
<b>Risk management leadership</b>	PwC has been at the forefront of ERM standard setting, and were a primary contributor to the COSO ERM framework. Since the late 1980s, we have advised leading insurers on risk measurement, capital allocation, risk-adjusted performance measurement, risk management organizational design, risk reporting, risk systems implementation, and risk policy and controls improvement.
<b>Extensive experience and knowledge</b>	PwC is advisor to approximately 90% of the world's top 50 insurance companies and over 85% of the insurers in the Fortune 1000. This breadth and diversity of our client base provides us unsurpassed knowledge of and insight into industry issues, as well as a thorough understanding based on personal experience of how insurers can effectively manage risk and capital.
<b>Practical insight and analysis</b>	PwC closely monitors activities at the NAIC, the European Commission, global insurance industry associations, national regulators, ratings agencies, and accounting standards bodies and has effective working relationships with all of them. We apply the insight we gain from these associations to develop practical solutions and consistent methodologies to help clients address their risk and capital issues. We regularly share this insight externally via white papers, monographs, technical bulletins and client events.

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## ***Appendix***



*Select qualifications.*

## **IFRS conversion— Major US insurance group**

### **Issues**

The client, a major insurance group with operating companies throughout the US, needed to assess the impact of converting its accounting framework to IFRS on its systems, financial reporting processes and procedures, and accounting policies.

### **Approach**

As a complex group, the client needed a solution that would integrate IFRS conversion into its existing change initiatives. PwC held a series of workshops with the client, bringing together the client's finance, IT and other operational staff and PwC IFRS subject matter specialists, to explore and identify potential issues during the conversion process.

During workshops with the client, PwC provided education to the client's staff on upcoming changes, and facilitated brainstorming on how the changes would impact the client, the potential timeline for conversion, and how the conversion project could be integrated with existing IT and other change projects.

PwC documented the workshops, and used the outputs to create a project roadmap for the client's management, identifying action points, timeline and resource estimates.

### **Benefits**

PwC brought an experienced team and established methodology to the project, helping the client to translate the future IFRS requirements into specific and tangible impacts on systems and processes. The documented outputs of the workshops and roadmap provided the client's management with a clear path forward.

The team's extensive experience enabled PwC to efficiently draw out the key issues and create an effective project plan, making best use of the time provided by the client's management and staff, and accelerating the client's IFRS conversion project.

Over the course of the project, PwC provided education on the IFRS requirements both to management and operational staff, enabling the client to hit the ground running for the remainder of its conversion project.

## Risk modeling— Global insurance group

### Issues

The client, a large global insurer domiciled in the US, developed a robust internal ECM, which was used to establish business and product level return targets and to monitor and manage ongoing risk and performance. The client also envisioned additional potential uses of the ECM.

Given the extraordinary strategic significance of the model, the client elected to have the ECM externally validated, thereby providing additional comfort to senior management and the Board that the model functions as intended. In addition, the client needed advice on good practices on Solvency II and needed its UK ECM validated for IMAP.

### Approach

PwC assembled a team of economic capital modeling specialists to perform a thorough validation of the client's ECM over an aggressive time period. The approach was designed to answer two key questions: (1) does the model work as intended?, and (2) is the model used properly? Our detailed validation consisted of a combination of extensive quantitative testing and qualitative reviews.

The delivered results reflected information gathered during interviews, documentation reviews, hands-on use of the model, and the explicitly designed validation tests tailored to the client's ECM structure. In addition, we conducted two "future use" workshops, engaging the client in discussions about ways in which the ECM could be used to further inform strategic decisions. We prepared a Solvency II gap analysis for the UK subsidiary and performed the independent validation of the UK model.

PwC also conducted a senior management workshop on Solvency II to provide the client's management with a SII overview for the purpose of: (1) comparing to the US regulatory environment, (2) creating a forum to discuss the most significant Solvency II "unknowns" and their potential impact on the client, and (3) provide a forum for the discussion of the most significant challenges of meeting Solvency II compliance.

### Benefits

We worked closely with the client team to accomplish the projects efficiently and effectively, helping business leaders understand the implications of SII to enable implementation decisions. We completed our work in a manner that could be highly leveraged by the client, using global resources to tailor the solution to the client's specific needs.

## **Risk modeling— Top 3 global life reinsurance group**

<b>Issues</b>	PwC assisted a Top 3 global life reinsurance group with the design and implementation of a sophisticated economic capital framework that meets industry standards and evolving regulatory expectations. The client, a large global reinsurer domiciled in the US, recognized that the existing simplified economic capital methodology and processes did not align with its risk profile. Given the complex nature of the business and unique risk profile, the objective was to develop a customized solution that included robust risk quantification and practical approaches to develop usable results to support decision making. The client expressed a need to work with industry practitioners and specialists that have already built leading practice economic capital frameworks for industry peers.
<b>Approach</b>	PwC assembled a team of risk management and economic capital specialists with both industry practitioner and consulting experience. An end-to-end economic capital framework was designed and implemented in a nine-month period. This framework included customized methodology refinements, and robust processes around calibration, calculations, and reporting for each risk type, in addition to addressing risk aggregation, diversification and allocation.
<b>Benefits</b>	The client teams had worked with consultants to enable an effortless transition to the new economic capital platform to support decision making. Subsequently, the client requested for additional subject matter advisors to support further refinements to the economic capital framework to compete with industry leading practices.

## Enterprise risk management— Global insurance group

<b>Issues</b>	<p>The client's ERM program, while developed, largely focused on the group as a whole, not on the ERM practices of the business units. The client had focused considerable resources toward complying with SII in the UK, but had not yet begun to focus on the evolving regulatory requirements within other jurisdictions. Our client sought our assistance with: (1) developing a process for embedding ERM within the business units globally, leveraging the work of the central ERM team and the SII program team; (2) working with business units to enhance business processes to embed ERM and the use of the group ECM; (3) reviewing the existing business units' governance to assess its effectiveness for supporting ERM, Solvency II, and evolving regulatory requirements; and (4) developing a system for documenting the ORSA evidence by solo-entities that would be sustainable over time.</p>
<b>Approach</b>	<p>PwC helped enhance the client's ERM program by developing an overall project plan for embedding ERM into business processes. This involved working with business-unit leaders to develop programs for enhancing and ultimately evidencing strong ERM practices and achieving local buy-in for all enhancements. In addition, we helped perform a governance assessment for each business unit (and the solo entities to which they were aligned), recommend enhancements, and provide support during implementation.</p> <p>We also worked with solo entities to determine any unique needs or requirements of local regulators that might not be addressed by the group ERM and SII program and recommended a process for demonstrating the ORSA evidence by solo entity and for the group.</p>
<b>Benefits</b>	<p>Our work involved closely working with our client over an extended period of time to:</p> <ul style="list-style-type: none"><li>• Leverage ERM and SII work already performed and underway by the group and solo entities.</li><li>• Obtain solo-entity buy-in for each recommended enhancement, focusing on the longer term benefits to be realized by the business units.</li><li>• Work closely with the client to help ensure that all activity was effective and efficient.</li><li>• Develop a sustainable group-wide ORSA process that would avoid long term duplication of effort.</li></ul>

## **Enterprise risk management— Global insurance company**

### **Issues**

After a review of the client's ERM, the client sought advice and detailed support to design and deliver a program to implement a wide range of business-driven change and meet enhanced regulator expectations. The client's primary objectives were to design and deliver a program to: (1) re-design and implement revised risk management and business practices to improve performance and meet Solvency II requirements, (2) develop the risk functions consistent with good industry practice, (3) align these developments with the CEO's vision for risk, and (4) communicate effectively to the regulator so that our client could meet their Solvency II expectations.

### **Approach**

The PwC team worked to design and implement the overall Solvency II program for the client, providing overall program management throughout this process. The new program involved defining an overall compliance function target operating model, and defining the detailed organization, roles, and responsibilities for compliance.

Key activities that PwC performed included: (1) assessing the wider business impact of Solvency II, (2) defining and assisting in detail regarding the design authority role, (3) defining Pillar 1 reporting requirements and internal model enhancement needs, (4) defining a revised risk appetite statement, risk management information requirements, risk governance and organization structure, and updated risk universe, (5) conducting a risk management policy refresh, (6) defining key steps to embed a stronger risk management culture, and (7) defining the approach to integrate the enhanced risk management framework with the internal capital model.

### **Benefits**

PwC provided a team of specialists to work with the client with wide geographical spread. Our team worked quickly with major focus on showing value delivered, in order to build and maintain support of key stakeholders. Our flexible resource model was able to provide targeted services to meet critical requirements for the client, such as identifying regulatory requirements between lead and local regulators, and providing distinct views on Solvency II.

## ***Internal and external reporting—European life insurance group***

<b>Issues</b>	A European Group wanted to use economic capital better in its insurance risk reporting and in particular wanted to find a way to improve the risk based decision making in order to meet their appetite metrics. The client wanted to initiate a process of using economic capital for insurance risk in its risk management process. The client's goal was to ensure that insurance risk could be monitored against expected levels to facilitate better decision making.
<b>Approach</b>	PwC identified an appropriate limit framework for each of the insurance risks, setting absolute limits that would help ensure insurance risks remained within appetite tolerance as well as thresholds that could be used to measure performance through green, yellow, and red zones. Our team prepared a revised management insurance risk information pack that showed economic capital, risk exposures, trends, and other key risk indicators against the limit/thresholds, over time and against business-plan levels. We developed potential management actions with implications and effectiveness metrics so that, should action need to be taken, the risk committee knew what options were available. Finally, we planned out a better process for linking the risk management process to the business planning cycle and used the limit framework for specific insurance risks to review and set business limits.
<b>Benefits</b>	PwC helped the client develop an improved, more focused and visually accessible insurance risk management pack that was made available to the risk committee. Additionally, the identification of limits and thresholds enhanced performance monitoring so that management could periodically align performance to organizational risk appetite. A plan was developed to improve longer term linkage of the limit framework to the business planning process. As an added benefit, the limit framework enabled greater linkage of business thresholds such as underwriting levels and reinsurance limits to the overall corporate risk appetite statement.

## **Data quality, accessibility, and comparability— Market data & trading services provider**

### **Issues**

The client, a provider of electronic foreign exchange market data and trading services, sought to consolidate applications in a production and DR data center and expand their POPs in London and Tokyo. The client was also looking for support in planning and executing the data center consolidation and POPs expansion initiatives. The client's overall goal was to obtain assistance in driving the design of the target-state operating model.

### **Approach**

PwC assisted in planning the new data center build-out and migration from the current to the new data center. In the planning phase we defined the consolidation scope, objectives, timeline, risk, dependencies, and criticality. Our team also defined the IT infrastructure required to support the new data center and the consolidation effort as well as the application migration methodologies and quantified necessary resource requirements. Throughout the project, we tracked progress and financials. We also provided assistance throughout the consolidation, from establishing vendor agreements with procurement to planning the build-out of the London and Tokyo POPs.

### **Benefits**

PwC provided leadership and technology experience to drive the target-state design to meet established timelines. We delivered and maintained a detailed project plan describing the build-out, migration, and clean-up tasks, as well as the project charter and progress report template. With our assistance, the client successfully carried out the new production data center build, the applications migration into the new data center, the decommissioning of two legacy data centers, the conversion of a data center to support DR, and the London POP planning.

*To have a deeper conversation,  
please contact:*

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