ERM/ORSA Training

Thai General Insurance Association (TGIA)

10 October 2017
## Agenda

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<td>▶ Enterprise Risk Management Framework</td>
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Top 10 Global Business Risks in 2017

1. Business interruption (incl. supply chain disruption and vulnerability) - 37% (2016: 38%)
2. Market developments (volatility, intensified competition/new entrants, M&A, market stagnation, market fluctuation) - 31% (2016: 34%)
3. Cyber incidents (cyber crime, IT failure, data breaches, etc.) - 30% (2016: 28%)
4. Natural catastrophes (e.g. storm, flood, earthquake) - 24% (2016: 24%)
5. Changes in legislation and regulation (government change, economic sanctions, protectionism, etc.) - 24% (2016: 24%)
6. Macroeconomic developments (austerity programs, commodity price increase, deflation, inflation) - 22% (2016: 22%)
7. Fire, explosion - 16% (2016: 16%)
8. Political risks and violence (war, terrorism, etc.) - 14% (2016: 11%)
9. Loss of reputation or brand value - 13% (2016: 18%)
10. New technologies (e.g. impact of increasing interconnectivity, nanotechnology, artificial intelligence, 3D printing, drones, etc.) - 12% (2016: 10%)

Source: Allianz Risk Barometer Top Business Risks 2017
Global Business Risks in 2017

Snapshot: Top Business Risks Around The World in 2017

Canada
Top risk: Business interruption
- Market developments
- Quality deficiencies, product recall

France
Top risk: Business interruption
- Cyber incidents
- Political risks (war, terrorism)

UK
Top risk: Cyber incidents
- Macroeconomic developments
- Brexit

Germany
Top risk: Cyber incidents
- Political risks (war, terrorism)
- New technologies

China
Top risk: Market developments
- Natural catastrophes
- Fire, explosion

Australia
Top risk: Business interruption
- Cyber incidents
- New technologies

Japan
Top risk: Natural catastrophes
- Business interruption
- Quality deficiencies, product recall

Singapore
Top risk: Business interruption
- Loss of reputation
- Cyber incidents

US
Top risk: Business interruption
- Cyber incidents
- Regulation/government change

Spain
Top risk: Business interruption
- Cyber risk
- Quality deficiencies, product recall

South Africa
Top risk: Cyber incidents
- Market developments
- Talent shortage

Italy
Top risk: Business interruption
- Market developments
- Natural catastrophes

Nigeria
Top risk: Macroeconomic developments
- Market developments
- Theft, fraud, corruption

Source: Allianz Risk Barometer Top Business Risks 2017
Weaknesses and past failures of Risk Management

“There was this idea that real estate investments were safe because the securities had a AAA credit rating.”
—Robert McDonald

► AIG Financial Product (AIGFP) division insured CDO against default through “Credit Default Swap”.
► Revenues ($3 bn.) rose about 17.5% of the entire company total.
► Insured CDOs comprised of subprime loan with lowest-rated tranches.
► When foreclosures hit high level, AIG had to pay claims and ended up with $25 bn. in losses.
► AIG’s credit rating had been downgraded and people started to terminate their agreements to get their collateral back.
► Liquidity problem due to lack of liquid assets.
Solvency II is an EU legislative program implemented on 1 January 2016. It introduces a new, harmonized EU-wide insurance regulatory regime.

Pillar 2 requires firms to undertake an Own Risk and Solvency Assessment (ORSA). Then ICP 16 adopted ORSA.

In addition to these requirements on firms, Pillar 2 also includes provisions for Supervisory review and action.
ERM and ORSA development across industries and regions

**International**

- **1992-2013: COSO**
  - Internal Control framework first published in 1992 and revised in 2013, ERM framework released in 2004
  - Gained wide acceptance following financial control failures of early 2000s
  - Most widely used framework in the US and widely used around the world

- **2004-2008: Basel 2**
  - First publication of Basel 2 in 2004 and implementation in 2008
  - Recommendations on banking laws and regulations to ensure that the amount of capital the bank needs to hold is in line with the risk to which a bank is exposed

- **2005-2013: S&P**
  - First publication of ERM for insurers in 2005
  - S&P considers 5 criteria: risk management culture, risk controls, emerging risk management, risk models, and strategic risk management

- **2009: ISO 31000**
  - Publication of ISO 31000, a family of standards relating to risk management
  - Applicable and adaptable for "any public, private or community enterprise, association, group or individual"

- **2011: ICP**
  - Insurance Core Principles by IAIS provide guidance on Enterprise Risk Management and Internal Control
  - The principles, standards and other supporting material are for the supervision of the insurance sector and assisting in their implementation.

**Local**

- **Europe**
  - **2009-2016: Solvency 2**
    - Publication of the framework directive (level 1) in 2009 and implementation in 2016
    - Currently considered as one of the most advanced insurance regulations

- **Malaysia**
  - **2011-2012: ICAAP**
    - First ICAAP guidelines issued in 2011 and implemented in 2012
    - BNM stated that the ICAAP guidelines are intended to clarify expectations for individual target capital levels (ITCLs) and capital management plans.

- **China**
  - **2012-2016: C-ROSS**
    - Launch of the project C-ROSS in 2012 and implementation in 2016
    - Framework relatively consistent with Solvency 2 relying on 3 pillars
    - Currently considered as one of the most advanced insurance regulations, especially in Asia

- **Singapore**
  - **2013-2014: MAS 126**
    - Publication of the notice MAS 126 in 2013 and implementation in 2014
    - Future Risk based capital framework (RBC 2) is also currently being discussed with an implementation date not agreed yet.
Implementing ERM and ORSA is an evolutionary process

- Define the governance and risk strategy, structure and outcomes
- Maturity assessments across Group and divisions
- Develop a project plan to manage the implementation
- Risk policies, standards and guidelines communicated
- Risk management roles and responsibilities defined and communicated
- Risk categories, capacity and appetite defined
- Risks assessed across the Group and divisions
- Risk tolerances and operational limits defined
- Key Risk Indicators identified and embedded
- Risk integrated into strategy and planning process
- Optimising risk reward relationship

Cultural Milestones
- Start
- 6 months
- 18 months

A strategic tool for risk management

Compliance focus

Risk Capability

Management process

Training and communication to build risk management capability across the Group

Bottom-up and top-down risk assessment, analysis and reporting

Risk threading through business planning, decision making, and control activities

ICAAP

MAS Notice 126

C-ROSS

Solvency II
# ERM Framework

## Business Strategy & Operations

### Risk Strategy

### Enterprise Risk Management

- **Strategic Risk Mgmt**
- **Asset & ALM Risk Mgmt**
- **Insurance Risk Mgmt**
- **Operational Risk Mgmt**
- **Other risks**

### Risk Framework

- **Risk Appetite Framework**
  - Risk capacity
  - Risk appetite statement
  - Risk tolerance
  - Risk limits

- **Risk Identification & Assessment**
  - Risk categorization (risk taxonomy)
  - Key risk register
  - Emerging/Strategic risk register
  - Risk and control self-assessment ("RCSA")

- **Risk Measurement and Modelling**
  - Economic capital modelling
  - Projection of market value balance sheet
  - Stress and scenario testing; Reverse stress testing
  - Key Risk Indicators & Key Control Indicators

- **Risk Monitoring & Reporting**
  - Continuity analysis, contingency planning
  - Risk reporting including ORSA reporting
  - Experience studies, loss studies
  - Recovery and resolution planning

### Risk Governance

- Organization structure
- 3 lines of defence model
- Roles and responsibilities of Board and senior management
- Linkage between departments

### ERM Delivery

- **People**
- **Policies & Procedures**
- **Data and IT Infrastructure**
3 Lines of Defense

1st Line

Risk Taking Business Units

2nd Line

Risk Management Function
Risk Modelling Function
Compliance Function
Actuarial Function

3rd Line

Internal Audit

Risk Management Systems

Own Risk and Solvency Assessment

Internal Control Framework

Board
Strategy, risk appetite and policy
What is ORSA?

It's ERM

It's Capital Planning

It's an audit

Business plans

Internal model!

Stress test
What is ORSA?

**O**wn
- Relates to your company’s own specific understanding...

**R**isk
- Of risks - not just the existing risks but emerging risks (short term and long term) - to ensure...

**S**olvency
- Solvency (on regulatory capital as well as economic basis) at all points of time under a range of plausible events by...

**A**ssessment
- Performing an assessment which is aligned with your business strategy.

“The objective of an ORSA is to provide sound and prudent risk management through a better understanding of overall solvency needs and capital allocation as well as the interrelation between risk and capital management in a looking forward perspective.”
Key ORSA Principles
To conduct an ORSA, an insurer needs to establish these principles:

- Integrated policy framework
- Forward looking
- Responsibilities of oversight function
- Integrated stress and scenario testing
- Evidenced and documented
- Adequate measurement and assessment processes
- All material risks
- Risk Identification
- Risk Assessment and management
- Use Test including contingency planning

The outcome of the ORSA:
Using an integrated stress and scenario testing framework
## ORSA Components

### ORSA METHODOLOGY

<table>
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<tr>
<th>People</th>
<th>Business context</th>
<th>Risk strategy and appetite</th>
<th>Governance &amp; Risk management process</th>
<th>ORSA process</th>
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<tbody>
<tr>
<td>Process</td>
<td>Deviation of risk profile</td>
<td>Capital and solvency position</td>
<td>Forward looking capital and solvency</td>
<td>Stress and scenario tests</td>
</tr>
<tr>
<td>System</td>
<td>Capital and liquidity plan</td>
<td>ORSA position during period</td>
<td>‘Use Test’ explanation</td>
<td>Independent review</td>
</tr>
</tbody>
</table>

### ORSA DOCUMENTATION

- **Policy**
- **ORSA report (Internal)**
- **ORSA report (External)**
Key Considerations

1. Business Context
2. Risk Strategy and Appetite
3. Stress and Scenario Test
4. Capital Requirement
5. ORSA Report
Business Context:
Description of legal and organizational structure, core activities and market environment

In UK, the regulator focuses on **Business Model Analysis** and **forward-looking**. This requires insurers to give more insight in their business planning, earning models and capital projections, including stress testing.

**Business Model Analysis questions:**

► Where do firms make money?
► Are the revenue streams sustainable?
► How well does the firm stand to tests of stresses on its balance sheet?
► Does the firm generate cash flow to cover dividends?
► Is the leverage of the firm sustainable?
► What are the risks from competition on premium income?
► Are there conduct risks, which could pose a prudential threat?
Risk Strategy and Appetite

Risk Appetite

Risk capacity
Total risk amount that the company is able to bear

Risk appetite
Total risk amount that the company is willing to take

Risk tolerance
Specific maximum amount of exposure by risk or risk category

Risk targets
Optimum level of risk by risk or risk category

Risk limits
Monitoring variation from expected outcome

Why do we need Risk Appetite?

1. Performance expectations and targets aligned with the amount of exposure required to achieve targets
2. Creates guidelines for investment allocation
3. Direction on acceptable behavior, level and type of risk-taking
4. Avoid excessive exposure to correlated events
5. Creates the basis for specific operational risk levels and performance ranges
Example: Forecasting a KPI with Risk Tolerance and Risk Limits

- **Risk exposure**
  - **Risk tolerance**
  - **Risk limit (high end)**
  - **Risk limit (low end)**

- **Actual risk exceeds tolerance, must reduce risk position**
- **Decrease risk OR justify the implications and expected return**
- **Increase risk OR justify the implications and expected return at this level**

- **TARGET**

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Risk Strategy and Appetite

Risk Appetite
Various scenarios will be considered in the ORSA and related capital, solvency and profitability outputs will be important inputs to further inform strategic decisions.

Risk Appetite and the ORSA will be key in helping to set and refine the business strategy and plan.
3 Stress and Scenario Testing

Keep in mind:
- Are the stresses, scenarios relevant for our business?
- Do we sufficiently consider emerging risks and events that could break us?
- Are management actions to mitigate the impact post stress/scenario “actionable”?

1 Identify risks & specify scenarios
2 Calculation and methodology
3 Use of Result

Common Risk Scenario
- Interest Rate
- GDP Growth
- Equity Price
- Credit Downgrading
- Inflation Rate
- Property Price

Most Likely Scenario
Moderate Scenario
Severe Scenario
The setting and calibration of scenarios and sensitivities is core to the ORSA. The most important part of this framework is how the results will be used.
The ORSA capital projection is inter-linked with the business planning.

For internal model firms, solvency projection is essential to validate the business plan and thereby demonstrate evidence for the Use Test.

For Standard Formula firms that perform the exercises separately, there would be a challenge in showing the ORSA projection is current if the business plan is out of date.
The ORSA capital measure is a better reflection of an insurer’s internal capital needs.

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<tr>
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<th><strong>Prescribed Capital Measure</strong></th>
<th><strong>ORSA Capital Measure</strong></th>
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<tr>
<td><strong>Scope</strong></td>
<td>Takes into account all quantifiable risks only</td>
<td>Takes into account all quantifiable and non-quantifiable risks</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Uses a standardized calculation</td>
<td>Uses a customized calculation</td>
</tr>
<tr>
<td><strong>Confidence level</strong></td>
<td>Uses a standardized confidence level</td>
<td>Uses a confidence level that is often higher than prescribed</td>
</tr>
<tr>
<td><strong>Management actions</strong></td>
<td>Does not take into account the impact of management actions</td>
<td>Takes into account any agreed management actions</td>
</tr>
<tr>
<td><strong>Time horizon</strong></td>
<td>Uses a standardized time horizon</td>
<td>Uses a time horizon that is consistent with its business planning time horizon</td>
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</table>
1. What information is captured within the report?

2. Are existing management information structured in the right format for easy adoption in the ORSA report?

3. Who are the key content owners for various sections of the ORSA report?

4. Who will be the overall owner of the ORSA report?

5. How often do you prepare the report?
5 ORSA Report
Information from the underlying processes

- Description of the governance process around the ORSA including challenge and debate
- Regular independent review on the ORSA process
- Description of assessments during the period driven by material changes or risk indicators
- Description of how risk and capital management activity is integrated into operational activity
- Capital and liquidity plans under base case and stress and scenarios
- Future capital/solvency under downside stress and scenarios
- Projected capital and solvency position over business planning period (3-5 years)
- Introduces the ORSA, states compliance with the ORSA policy. Provides sign-off by CRO
- Description of legal and organisational structure, core activities and market environment
- Description of how risk management strategy supports business. Appetite statements, current profile and monitoring
- Description of risk governance, risk universe and risk policies
- Description of firm’s process and procedures for identifying, assessing, controlling and prioritising risks
- Point in time (reporting date) capital and solvency on economic and regulatory basis

Key: Typical Ownership

- Finance / Actuarial lead
- Risk lead
- Internal Audit
## ORSA Report

**Teams input into ORSA**

### Underwriting
- Identify, assess, monitor and report the underwriting risk
- Input into ORSA
- Assesses future underwriting decision

### Compliance
- Identify, monitor, assess, report on compliance risk
- Input into ORSA

### Risk Management
- Oversee operation of OSA & Risk management system
- Oversee and challenge view on risk exposure, risk profile and projections
- Horizon scan and assess emerging risks
- Validate Internal Model

### Investment
- Identify, measure, monitor manage, report on investment exposures and strategies
- Provide asset data for ORSA and other reporting
- Own risk mitigation strategies

### Actuarial
- Calculation for Technical Provision
- Assess suitability of model/methodology, assumption and data
- Contribute to risk management system

### Finance & Accounting
- Produce external financial reporting numbers including the ORSA
- Support production of internal management report
- Own accounting and consolidation systems
- Provide information for strategy and business plan

### Information Technology
- Support and enhance the systems and models used for internal and external reporting including ORSA
- Deliver data quality/documentation framework

### Internal Audit
- Review ORSA Process and report
- Give an independent view and assessment of ORSA

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**Teams Input into ORSA**
**ORSA Report**
**Integrated Reporting**

Using a common language (i.e. Risk Catalogue, Processes, Definitions)

Data input:
- Risk and control assessments (RCA)
- Key risk indicators
- Loss data
- Compliance
- External audit
- Internal audit
- Others (i.e. market risk, insurance risk etc.)

Create individual views for the different addressees

Addressees/views:
- Board of Directors/AC
  - Executive Board
  - Risk Committee
  - Senior Management
- Risk Manager
- Risk Controlling
- Internal Audit
- ....
- § External addressees
  - Regulator
  - External Auditor
  - Rating agencies
  - ....

- § Internal addressees

Data warehouse
In our client work on ORSA we have observed the following emerging challenges:

1. Lack of understanding & buy-in from the Board
2. Not aligned to strategic planning
3. Report focussed rather than on its process
4. Difficulties in analyzing the difference between economic capital and regulatory capital
5. Lack of clear ownership of components
6. Difficulty in collecting data inputs into ORSA process
7. Capital contingency plan development
8. Lack of linkage between risk, strategy and capital
9. Emerging risk
10. Under-quality around stress and scenario test
### How EY can help

#### Enterprise Risk Management and ORSA

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<th>ORSA roadmap &amp; implementation</th>
<th>ORSA reporting</th>
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<td>Development of ERM framework, policy and manual</td>
<td>Risk Assessment Design and Implementation</td>
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<td>Risk Appetite &amp; Stress Testing</td>
<td>ERM Training</td>
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#### Customer & Growth

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<th>Customer Experience</th>
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<td>Distribution Management (incl. technology &amp; CRM)</td>
<td>Digital Strategy, Experience, and Architecture</td>
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#### Cyber Security

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<th>Data Protection and Data Privacy</th>
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<td>Cyber Risk and Insurance</td>
<td>Cyber Transformation</td>
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<td>Cyber Resilience</td>
<td>Identify and Access Management</td>
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#### Internal Audit Service

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<th>Establishment of internal audit function</th>
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<td>Internal audit training</td>
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#### Operational Excellence

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<th>Underwriting, Product &amp; Policy</th>
<th>Transforming IT</th>
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#### FRAC

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<th>Compliance</th>
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