

ENTERPRISE RISK MANAGEMENT FOR INSURANCE COMPANIES

Trends and Best Practices

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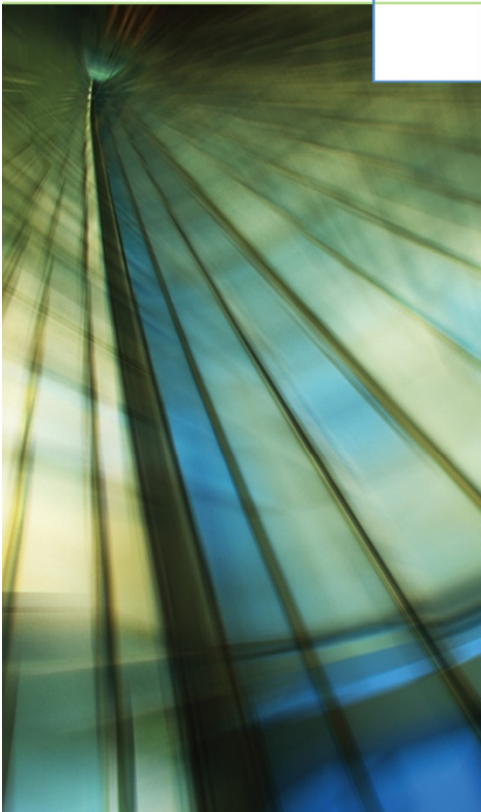
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Regulatory Developments

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Overview

- > Regulatory Developments – Increased Oversight of Insurers' ERM
 - Own Risk and Solvency Assessment (ORSA)
 - Form F
 - Corporate Governance Annual Disclosure (CGAD)

Historical Perspective – How did we get here?

- > 2008 Financial Crisis
 - Too big to fail
 - Various regulatory bodies
- > Impact on Insurance Industry
 - Investment portfolios
 - Concentrated exposures



**TOO BIG
TO FAIL**

Own Risk and Solvency Assessment (ORSA)

- > Own Risk and Solvency Assessment (ORSA)
 - A confidential internal assessment appropriate to the nature, scale, and complexity of an insurer or insurance group, conducted by that insurer or insurance group of the material and relevant risks associated with the insurer or insurance group's current business plan, and the sufficiency of capital resources to support those risks.
 - Prepared consistent with ORSA Guidance Manual

Own Risk Solvency Assessment (ORSA)

- > The ORSA has two primary goals:
 - Foster an effective level of enterprise risk management for all insurers in the group
 - Provide group-level perspective on risk and capital to supplement existing legal entity view

Key ORSA Requirements

- > Insurers must periodically, no less than annually, conduct an ORSA to assess the adequacy of their risk management framework and current and estimated projected future solvency position
- > Internally document the process and results of the assessment
- > Provide a confidential high-level ORSA Summary Report annually to the lead state commissioner if the insurer is a member of an insurance group and, upon request, to the domiciliary state regulator

Form F – Enterprise Risk Report

- > Form F is meant to evaluate enterprise risk
 - Must be completed annually, and is filed with the lead state regulator of the insurance group
- > Form F filings should contain:
 - Information on strategy, internal audit findings, compliance, or risk management
 - Any changes of 10% shareholders in system
 - 12 month business plan and strategies of the system
 - System capital resources and material distribution patterns
 - Discussions with rating agencies that may cause negative movement in system's credit ratings
 - Material activity or developments in the system that, in the opinion of senior management, could adversely affect system

Form F – Industry Concerns

- > Control and disclosure based on 10% ownership anywhere within holding company system
 - Accurate information may be unavailable
- > Some information is very sensitive, trade secret, or involves subjective internal assessments
- > Rating agency discussions could be very expansive
- > Senior management must make forward-looking, subjective assessments
 - Possibly subject to personal liability or sanctions

Corporate Governance Annual Disclosure

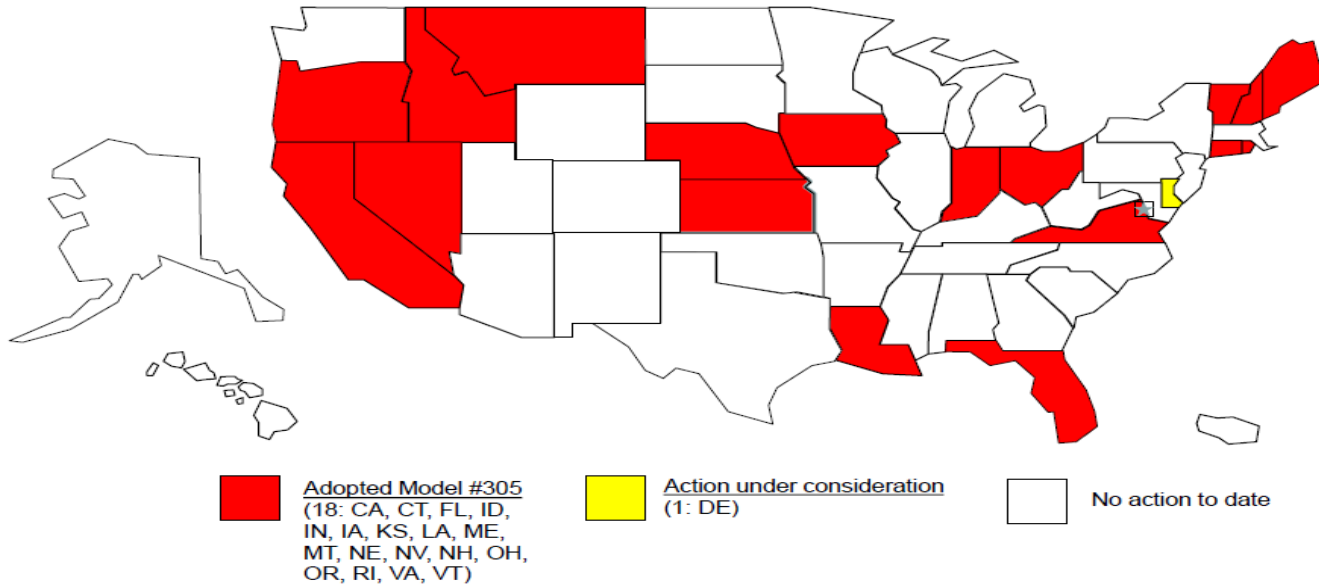
- > NAIC's Financial Condition Committee adopted a Corporate Governance Annual Disclosure Model Act and supporting Model Regulation in November, 2014
- > Together, the Models require insurers to file an annual Corporate Governance Annual Disclosure (CGAD) to their lead state or domestic regulator by June 1st of each year
- > The CGAD is protected by strict confidentiality to encourage openness and transparency

Corporate Governance Annual Disclosure

- > At a minimum, the CGAD must address:
 - Insurer's Corporate Governance framework and structure;
 - Policies and practices of Board of Directors and significant committees;
 - Policies and practices directing Senior Management; and
 - Processes by which Board of Directors, committees and senior Management ensure appropriate level of oversight to the critical risk areas impacting insurer's business activities

Model Act Adoption

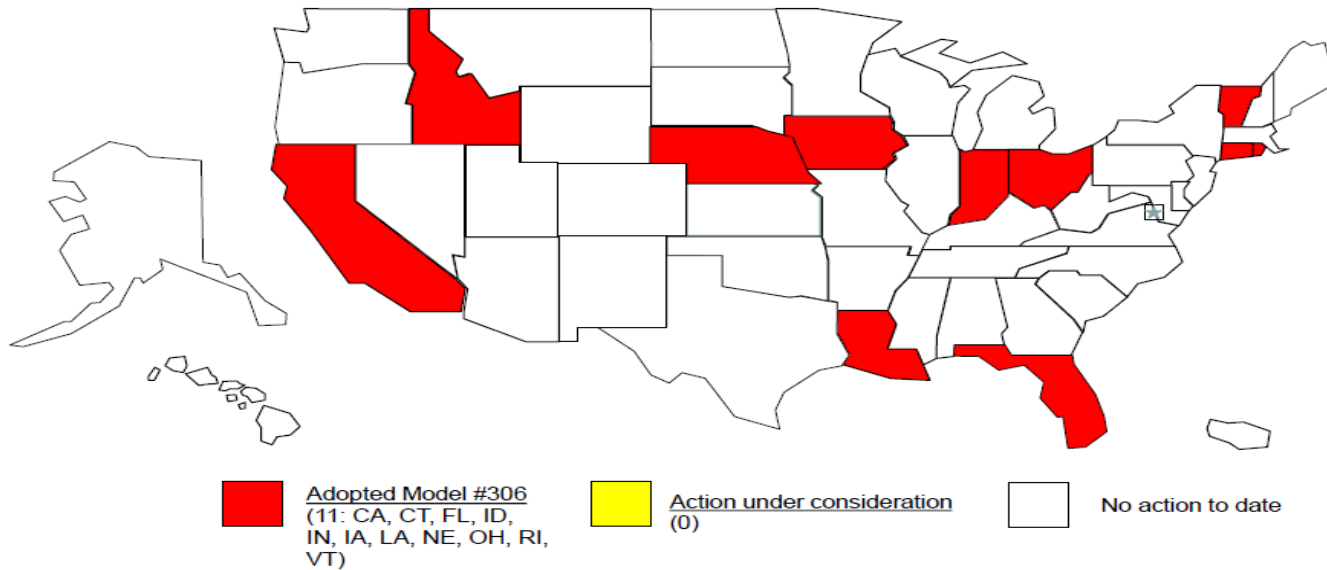
Implementation of Model Act #305
Corporate Governance Annual Disclosure Model Act
[status as of July 31, 2017]



Source: NAIC (http://www.naic.org/documents/committees_e_related_smi_dashBoard.pdf)

Model Regulation Adoption

Implementation of Model Act #306
Corporate Governance Annual Disclosure Model Regulation
[status as of July 26, 2017]



Source: NAIC (http://www.naic.org/documents/committees_e_related_smi_dashBoard.pdf)



ENTERPRISE RISK MANAGEMENT FOR INSURANCE COMPANIES: TRENDS AND BEST PRACTICES

Matthew Nielsen –Government and Regulatory Affairs

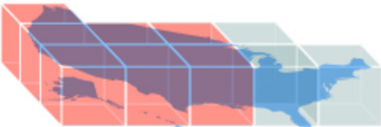
RMS USAGE ACROSS THE GLOBE

Market Leaders Choose RMS

9 OF THE TOP 10 U.S. COMMERCIAL INSURERS



7 OF THE TOP 10 U.S. PERSONAL LINES INSURERS



90% OF INSURERS AND (RE)INSURERS IN BERMUDA



34 OF THE TOP 40 GLOBAL REINSURERS



9 OF THE TOP 10 GLOBAL REINSURANCE BROKERS

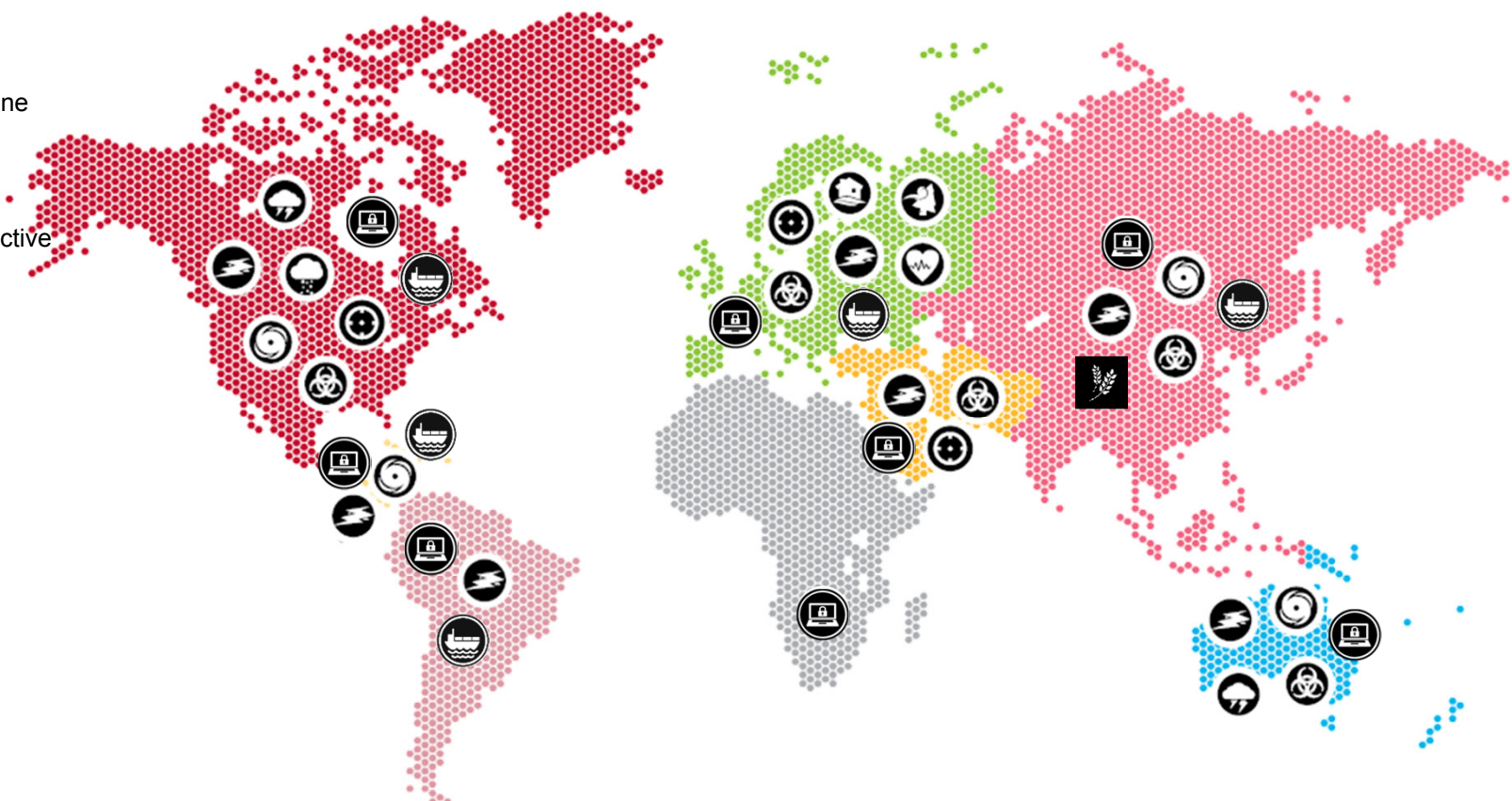


70% OF LLOYD'S MANAGING AGENTS



RMS PERIL MODEL COVERAGE

- Earthquake
- Tropical Cyclone
- Windstorm
- Severe Convective Storm
- Winter Storm
- Flood
- Terrorism
- Pandemic
- Longevity
- Agriculture
- Marine
- Cyber



KEY APPLICATIONS



Portfolio Management

- Determine risk drivers
- Evaluate Capital Adequacy
- Estimate post-event losses



Risk Transfer

- Determine reinsurance needs
- Structure and price risk transfer
- Used as a “common currency”



Underwriting

- Analyze policy structures
- Differentiate risks
- Establish guidelines
- Develop rating

MODEL USAGE IS BECOMING MORE COMPLEX

Insurance companies have begun creating larger and more sophisticated risk management teams and processes

Model usage is changing – companies are imparting their own knowledge into the process

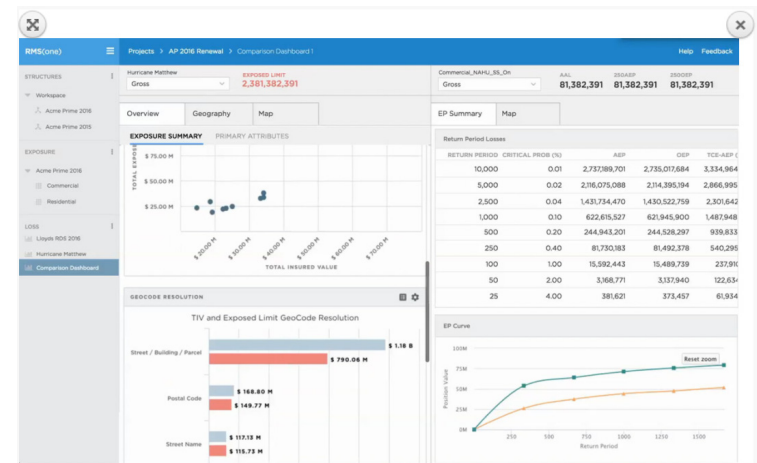
In the reinsurance market and outside of the U.S., owning your own view of risk is encouraged by regulators

In the U.S., there is hesitancy to move from the “reference view” of risk



REFERENCE VIEW OF RISK

- Models provides flexibility to users
 - Users can adjust model, input, and output settings to match their unique characteristics
 - Users have the ability to create their own view or risk and impart their own knowledge into the modeling process
- Modelers create a 'reference view of risk' as a starting point for the modeling process
 - This view is based on modeler recommendations of hazard, vulnerability, and financial methods



MODIFICATIONS MADE BY USERS

Exposure	Hazard	Vulnerability	Loss
<ul style="list-style-type: none"> • Users have full control over input data used in models • Adjustments can be made to values, characteristics, location accuracy 	<ul style="list-style-type: none"> • Hurricane: frequency, storm surge • Earthquake: attenuation, fire-following, EQSL • SCS: event set (LF/HF), perils • WT: Perils modeled 	<ul style="list-style-type: none"> • Sensitivity tests to demonstrate higher and lower potential damageability • Removing or adding primary or secondary characteristics 	<ul style="list-style-type: none"> • Loss amplification resulting from demand surge, claims inflation, or supercat • Use of secondary uncertainty

DIRECTING MODEL-RELATED QUESTIONS

- Interpreting model output can be a detailed and involved process
- Many questions arise during this process
- Some questions can be quickly answered by RMS, while others need to be answered by the company directly

Company

- Model settings used
- Quality and availability of input data
- Modeled vs unmodeled
- Post modeling loss adjustments
- Validation of user results
- Deviations from the RMS reference view

Modeler

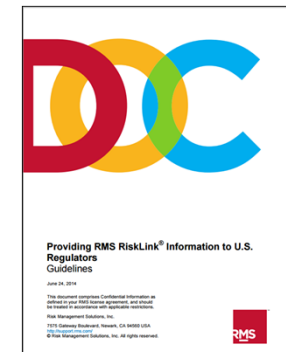
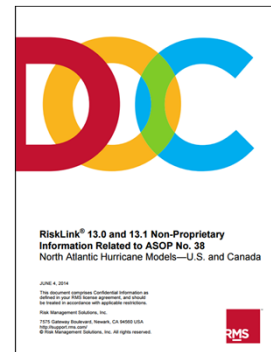
- Appropriateness of model for use
- Model methodology
- Validation and calibration of model
- Model sensitivity and uncertainty
- RMS reference view of risk

DOCUMENTATION

RMS creates documents in the public realm to support the regulatory and third party users

- ASOP 38
- State specific interrogatories (e.g. Louisiana, South Carolina)
- Florida Commission on Hurricane Loss Projection Methodology Submission (www.sbafla.com/methodology)

What other information is useful?





ERM for Insurance Companies TRENDS & BEST PRACTICES

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MERLINOS actuaries
consultants

CURRENT EVENTS

- U.S. ORSA established
 - ✓ *At least two reports, hopefully some feedback from regulators*
- Continual maturation of ERM programs
- Changing regulatory/solvency standards
 - ✓ *Solvency II equivalence*
 - ✓ *EU – US Covered Agreement*
 - ✓ *Bermuda Economic Balance Sheet*
- Increasing recognition of qualitative risks, sophistication of analysis
- Focus on emerging risks

TOP TEN EMERGING RISKS – Q2 2016

1. Technological Disruption
2. Evolving Customer Expectations
3. Vendor Relationship Management
4. Unpredictable Political Landscape
5. Ransomware
6. Energy Price Shock
7. Supply Chain Disruption
8. Asset Bubble
9. US Monetary Policy Uncertainty
10. Ineffective Millennial Engagement and Retention

SOURCE: CEB Risk Management Leadership Council

TOP TEN EMERGING RISKS – Q2 2017

1. Change Fatigue
2. Data Privacy
3. People-Based Cyber Incidents
4. Big Data Analytics
5. Knowledge Retention
6. U.S. New Political Leadership
7. Corporate Culture
8. Global Economic Slowdown
9. Cyber Security Disclosure
10. Succession Challenges

SOURCE: CEB Risk Management Leadership Council

TOP THREE RISK FACTORS BY YEAR

2015

1. Political and Regulatory Uncertainty
2. Tougher Competition
3. Customer Satisfaction

2016

1. Political and Regulatory Uncertainty
2. Tougher Competition
3. Customer Satisfaction

2017

1. Tougher Competition
2. Customer Satisfaction
3. Political and Regulatory Uncertainty

SOURCE: Association for Financial Professionals

OTHER CHALLENGES

- Return of inflation
- Cloud risk accumulation
- Fragmented regulatory frameworks
- Infectious disease
- Stress on water supply
- Opioid epidemic and other man-made epidemics
- Emerging artificial intelligence legislation
- Eroding rationality
- Graying workforce



ERM for Insurance Companies TRENDS & BEST PRACTICES

Thank you!

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