Effective ERM Stakeholder Engagement

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Effective ERM Stakeholder Engagement

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Executive Summary

Risk management has developed quickly in the past decade in the insurance industry and is playing a more important role in business decision-making. The evolution of risk management keeps bringing changes to existing business management. It takes time and resources for people to learn, understand, validate, and finally agree on these changes.

Surveys were conducted to understand the current practices of enterprise risk management (ERM) stakeholder engagement. Depending on the level of ERM maturity within an organization, challenges still exist to improve ERM buy-in.

- The benefit of risk management is difficult to measure. The value that ERM can bring to better and more informed decision-making may not be sufficiently realized.
- Room still exists for improving the credibility of risk management analysis, which may be jeopardized by model complexity, model risk, and the 2008 financial crisis experience.
- Risk management activities may be affected by insufficient resources and internal politics.
- The role of the risk management function and the chief risk officer may not be clearly defined.

To address the issues raised in the survey, several areas can be focused on to improve risk management stakeholder engagement. ERM stakeholder analysis can be conducted to identify stakeholders and analyze their interests, concerns, influence, and expected responses to an ERM initiative. Stakeholders can then be mapped into different engagement types, with corresponding engagement strategies. Effective communication can help improve transparency, avert misunderstanding, and attract stakeholders. The importance of ERM needs to be communicated from the top. Risk communicators should know their audiences, use evidence-based communication as much as possible, embed actionable suggestions in risk communication, and maintain a high standard of credibility. Knowledge gap analysis can be used to design a personalized training plan for each stakeholder. The tangible benefits of an investment in risk management capabilities can be quantified and aligned with the organization's traditional project decision framework for project comparison and selection. Validation is important to improving the credibility of ERM analysis. Stress testing and partial validation are beneficial in the presence of insufficient data, and will give stakeholders greater confidence in using validated risk management analysis for decision-making. Accountability is important for ensuring that risk policies and strategies are actively followed within the organization. Risk ownership and the roles and responsibilities of the CRO and risk management functions need to be clearly defined and communicated so that stakeholders know their goals and what to expect from a risk management project. The long-term goal is to have a healthy risk culture. Analyzing the gap between current and target risk culture helps in designing intervention plans to improve risk attitudes and risk behaviors.

Specific strategies can be chosen considering ERM maturity, stakeholder analysis results, project type, available resources, and so on. This report also discusses three examples of stakeholder

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engagement: evaluating the building of an analytic infrastructure, promoting product risk management, and embedding risk-adjusted measures in performance measurement.

Section 1: Introduction

Enterprise risk management (ERM) developed quickly in the insurance industry over the past decade, especially after the 2008 financial crisis. Many changes in insurance business models and insurance business management were driven by regulators, rating agencies, and the availability of more computing capacity.

Integrating the new risk management developments into business management and corporate governance requires significant effort. Some risk management initiatives are sophisticated and technical. These initiatives are likely to cause changes to business strategies and how business value is measured.

The value of risk management to smart risk selection and healthy business development may be overlooked. With multiple projects competing for resources within an organization, risk management needs to prove its value to a business. However, the benefits of risk management are often difficult to quantify and attribute.

In some cases, the response to risk is still reactive rather than proactive. Some risk issues are brought up without a practical mitigation plan. The role of the risk management function in a company could also be vague. All these issues make it difficult to achieve buy-in and success for risk management activities, especially when they are not driven by regulatory requirements. Even when risk management activities are driven by regulators, they may be done mainly to meet the requirements, but have minimal impact on risk-taking and business management.

To increase buy-in for risk management, effective stakeholder engagement is needed. Common stakeholder engagement methods are helpful, but special strategies to improve ERM stakeholder engagement are needed as well. This paper explores effective ERM stakeholder engagement strategies. The report proceeds as follows:

- Section 2 (ERM Stakeholders) introduces internal ERM stakeholders and their interests.
- Section 3 (Current Practice) discusses the challenges for ERM stakeholder engagement based on responses to two surveys conducted with key ERM stakeholders in the insurance industry.
- Section 4 (ERM Stakeholder Engagement) describes areas of improvement to enhance ERM stakeholder engagement. The section focuses on methods addressing the uniqueness of ERM practices through the entire stakeholder engagement process. It covers stakeholder analyses that predict the responses of stakeholders to ERM initiatives, valuation analysis so that ERM projects can be compared with other projects on a consistent basis, effective communication and training, and building an open-minded corporate culture.
- Section 5 (ERM Stakeholder Engagement Example) discusses strategies to improve stakeholder engagement for different risk management activities, including building analytic infrastructure, product risk management, and performance measurement.

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- Section 6 (Conclusion) summarizes the key points of this research and concludes the main body of the report.

Section 2: ERM Stakeholders

ERM affects all aspects of the business, from high-level strategy to day-to-day operations. ERM stakeholders are individuals or groups that have interests and/or concerns in ERM, can contribute to and influence the design and implementation of ERM, and are affected by ERM. Internal ERM stakeholders usually include the following:

Senior Management

1. Board of directors. The board of directors represents the interests of stockholders (stock company) or policyholders (mutual company) and usually intends to maximize the company's long-term value. Its members are responsible for setting or approving the risk appetite of the company.
2. Senior executives. ERM can help senior executives better manage a company's risk profile and make informed business decisions for better risk-return balance. However, some ERM initiatives may lead to increased expenses and less risk-taking, which may drag down short-term profit and bonuses.

First Line of Defense

The first lines of defense are functions that manage risks in business operation. They are risk owners.

3. Investment team: The investment team may be significantly affected by ERM as ERM practices may limit the investment team's room for active management of the investment portfolio. ERM helps ensure investment activities are suitable for the underwritten business.
4. Asset liability management (ALM) team: They are responsible for managing the mismatch between asset and liability values and cash flows. ERM initiatives may provide them with new tools to facilitate analysis and implementation. New ERM strategies may change the method of managing asset-liability mismatch.
5. Actuarial team: The actuarial team provides knowledge on the risks embedded in the liability portfolio. New ERM analytical tools may improve actuarial models and help companies meet new regulations on reserving and capital requirements.
6. Underwriting team: The underwriting team performs risk assessment and risk selection of individual insurance contracts. ERM activities can provide the underwriting team with guidance on risk selection criteria. The underwriting team makes sure that the risks being taken are consistent with the company's risk appetite.
7. Claim team: The claim team manages the risks raised from insurance claims, such as false claim and reputational risk. ERM activities such as setting up formal processes of fraud

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detection and reputational risk monitoring help the claim team manage these risks better.

8. Finance team: Some risk management tools can help the finance team prepare for financial reporting, such as meeting the upcoming International Financial Reporting Standard (IFRS) 17 requirements on risk adjustment. They may also be asked to conduct financial projections under different scenarios to assess earnings volatility.
9. Business development team: Business development teams focus largely on business acquisition, business retention, and market competition. They may not be advocates for risk management, which could put constraints on business plans, product features, and risk selections. However, ERM helps the team align its strategies with the company's risk appetite, which is vital for long-term success.
10. Information technology (IT) team: IT teams are heavily involved in risk management projects, managing information security risk and providing technology support for new risk management tools, automating risk monitoring, and so on.
11. Human resources team: The HR team helps manage people risk and arrange risk management training for employees. ERM activities may bring new risk-based criteria to performance measurement.

Second Line of Defense

The second line of defense refers to functions that oversee the risks and make sure the risks are properly managed in the first line of defense.

12. Risk management team: The ERM team, including the chief risk officer (CRO), is responsible for designing and implementing ERM policies and tools throughout the company. Its members are the organizers and key drivers of risk management practices. Successful ERM can empower risk managers to understand the risk profile and provide solutions to risk-related issues.
13. Legal and compliance team: Members of this team are part of the second line of defense for risk management oversight. They play an important role in fulfilling regulatory requirements and handling reputational risk events.

Third Line of Defense

The third line of defense is internal audit, which provides a high level of independence when assessing risk management practices.

14. Internal audit team: The audit team is the third line of defense for risk management oversight. Its members important to ensuring risk controls and integrity in the company.

All Internal Teams

All internal teams are affected by the additional control, reporting, and documentation requirements brought by ERM. Internal teams may also be required to assess their own risks, as part of the own risk and solvency assessment (ORSA) program.

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It is important for risk professionals to engage internal stakeholders effectively during the entire risk management process so that they understand, accept, and will be willing to provide expertise and improve the process. With the buy-in of internal stakeholders, external stakeholders are easier to convince. External stakeholders usually include regulators, rating agencies, bondholders, investors, customers, reinsurance clients, and third-party suppliers.

Section 3: Current Practice

To understand risk management professionals' experiences obtaining stakeholder engagement and current best practices for doing so, two surveys were conducted in the actuarial risk management community: a pilot survey and an online survey. The pilot survey targeted senior executives through phone and face-to-face interviews. The discussions were open-ended, in order to collect ideas about the issues prevalent in ERM buy-in. Eighteen interviews were conducted, including with six CROs, five CFOs, three chief actuaries, two CIOs, and two heads of internal audit. The findings of the pilot survey were useful not only for designing the online survey, but also for identifying areas in which to improve ERM stakeholder engagement.

An online survey was then sent out to the members of the Joint Risk Management Section (JRMS) and the International Network of Actuarial Risk Managers (INARM). Risk officers (*both internal and external*) and other internal stakeholders, excluding risk officers (*senior management and first line of defense*) were asked different questions, as listed in Appendix A—ERM Stakeholder Engagement Questionnaire for Risk Officers and Appendix B—ERM Stakeholder Engagement Questionnaire for Internal Stakeholders Excluding Risk Officers. Here, risk officers include CROs, second and third lines of defense, and external risk management consultants. One hundred and seventeen responses were collected, including 43 percent from risk officers and 53 percent from internal stakeholders excluding risk officers. Of the risk officers, 29 percent are external risk management consultants.

Observations

The online survey covers the importance of ERM stakeholders, opinions on ERM, integration of ERM and strategic planning, and ERM stakeholder engagement challenges and strategies. The main findings of the online survey are summarized as follows.

1. Among all internal stakeholders, senior executives have the widest gap between the importance they ascribe to implementing ERM and their actual supportiveness.
2. In general, internal stakeholders excluding risk officers have a more optimistic view of ERM development in a company than do risk officers.
3. Demonstrating and quantifying the value of ERM is the most difficult challenge faced by risk officers. Getting support from senior management is the least challenging one.

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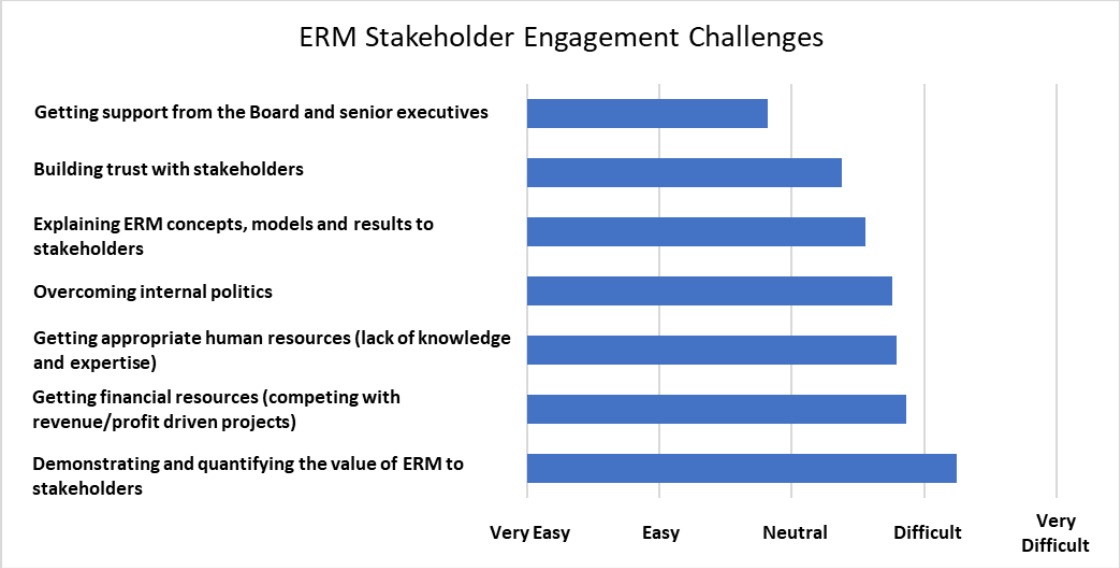
Figure 1

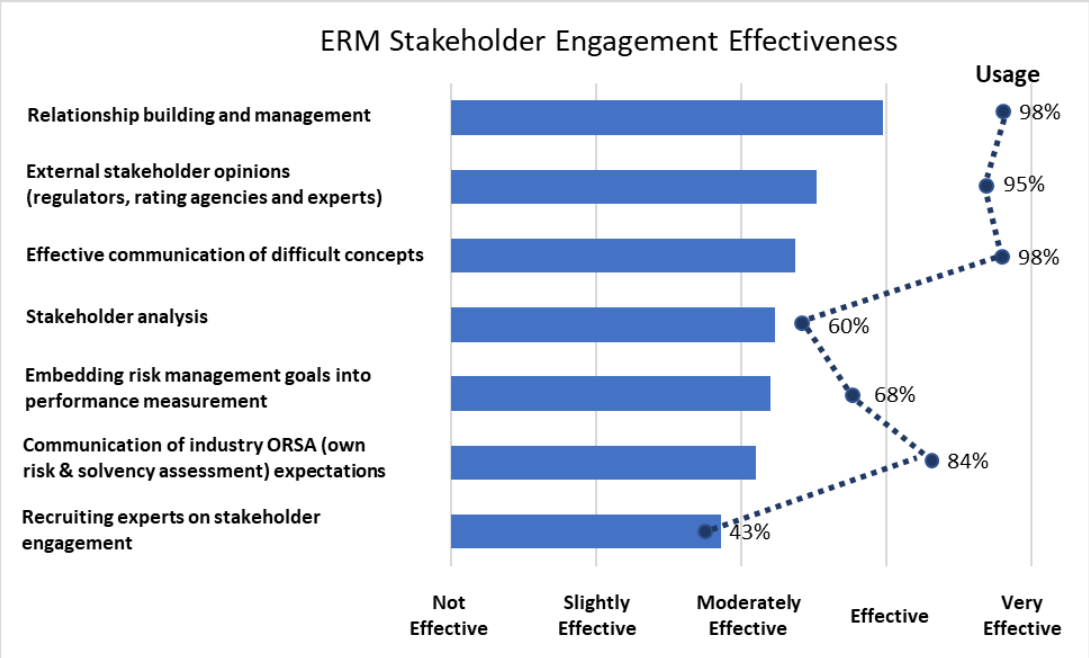
ERM Stakeholder Engagement Challenges



4. According to risk officers, relationship building, external stakeholder opinions, and effective communication of difficult risk management concepts are the most used and most effective methods of ERM stakeholder engagement. Stakeholder analysis and embedding risk management goals in performance measurement are less used, but more than modestly effective.

Figure 2

ERM Stakeholder Engagement Effectiveness



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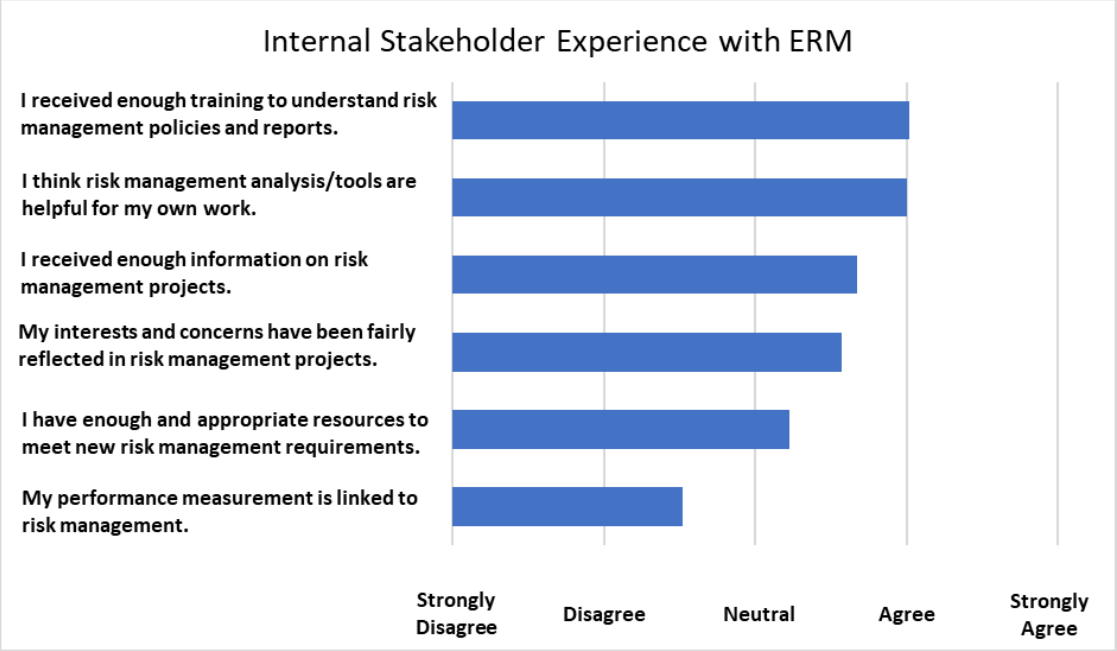
5. Internal stakeholders excluding risk officers still face a lack of resources as a constraint to meeting new risk management requirements.

Figure 3
Internal Stakeholder Experience with ERM



6. Face-to-face interviews are the most effective method of ERM communication, followed by regular reporting and workshops.

Detailed survey questions and survey results can be found in the appendices.

Challenges

Major challenges are identified based on the survey responses and are addressed in Section 4. The challenges that risk officers have when promoting risk management concepts, policies, and implementations are not very different from the challenges faced by any innovation.

1. **The benefit of risk management is difficult to measure.** Except when a risk management activity is driven by regulators or it helps improve the company's credit rating, the benefit of the project may not be apparent to some stakeholders. In normal periods, the cost of risk hedging or risk mitigation may be seen as a drag on profit. In an extreme situation, risk management may be blamed for losses even though the company was taking risks exceeding its risk tolerance in order to stay competitive in the market.
2. **Risk management activities may also be affected by insufficient resources and internal politics.** Risk management team may be understaffed. ERM initiatives may be deferred because of insufficient financial support. New ERM policies may change the status quo and encounter resistance in the company.

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3. Risk management could require material changes to existing practices and create additional work. It takes time and effort for people to understand, test, and agree on changes. It may also require additional tools and human resources that may not always be available.
4. The role of the risk management function and the chief risk officer may not be clearly defined. Risk management projects usually require the involvement of many departments, and it is not always clear who is accountable for the final result.
5. Risk management concepts are rarely self-explanatory. They discuss stress scenarios, extreme events, and probabilities requiring statistical knowledge. It becomes even more difficult to explain advanced models used in economic scenario generation, nested stochastic calculation, tail risk management, risk aggregation, and so on.
6. The credibility of risk assessment results has room to improve. Risk assessment deals with extreme events, which may not be observed in recent history. Without validation, stakeholders may be inclined to make judgments in a heuristic way.
7. Model risk is high for risk management analysis. Quantitative risk management models are complicated, and the results are sensitive to assumptions. This sensitivity and complexity leads to high model risk, which may hinder the contribution of risk management analysis to business decision-making.
8. The value of risk management in improved decision-making may be overlooked. Stakeholders may spend minimal time and resources to meet the requirements but not use the information and analysis to help make business decisions.

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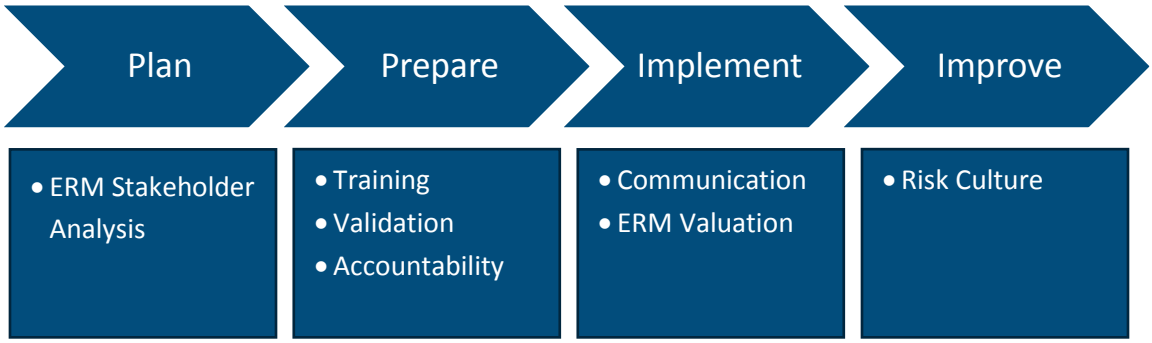
Section 4: ERM Stakeholder Engagement

Engagement strategies can be used to address the challenges identified by the ERM stakeholder engagement surveys in Section 3. It is useful to understand available strategies and use appropriate ones depending on the level of ERM maturity and the type of risk management activity. Figure 4 shows a standard stakeholder engagement process with suggested areas of improvement for each phase.

Figure 4
Stakeholder Engagement Process



Common engagement strategies that are widely used for project management apply to ERM stakeholder engagement as well. However, the suggestions in this section try to address unique challenges faced by ERM activities.

4.1 ERM Stakeholder Analysis

Stakeholder analysis helps predict stakeholders' responses and helps with the design of appropriate strategies to improve stakeholder engagement. The philosophy of risk management stakeholder analysis is not different from that of general project management and business operation. Internal risk management stakeholders' interests in and concerns about risk management activities, along with the stakeholders' knowledge, power, and influence on ERM activities can be used to group, or map, stakeholders into different types with different engagement strategies and efforts.

Various stakeholder mapping methods exist. For example, Savage et al. (1991) used the potential for threat and the potential for cooperation for stakeholder mapping. Turner et al. (2002) used a stakeholder's knowledge (aware or ignorant) and attitude (supportive or opposing). Cameron et al. (2010) used the needs and relative importance of stakeholders in stakeholder ranking.

The selection of dimensions for stakeholder mapping can vary depending on preference. Normally two or three dimensions are used to avoid unnecessary complication. Each dimension is also divided into a few segments to separate the stakeholders. A principle of dimension and segment selection is that each type of stakeholder has different engagement strategies from others.

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Table 1 illustrates an evaluation of internal stakeholders for an ERM initiative to bring risk-adjusted measures into a business decision. Each stakeholder's interests, influence, and responses are evaluated. A stakeholder has a high interest if he/she will be materially affected by ERM activities. A stakeholder has a high influence if he/she has a lot of power to change the course and outcome of ERM activities. The probable responses from stakeholders are jointly determined by their current level of interest, concern, and relevant knowledge and experience.

Table 1

Sample ERM Stakeholder Analysis

Stakeholder	Interests[1] (Target Status)	Influence[1] (Current Status)	Response[2] (Current Status)
Board	5	5	2
Senior Executive	4.5	5	3
Risk Management Team	5	3.5	1
Investment Team	2	3	4
ALM Team	3	2.7	2
Actuarial Team	4	4	3
Underwriting Team	4	2.5	2
Claim Team	3.5	2	3
Finance Team	2	2	3
Legal and Compliance Team	3	4	1
Audit Team	4	3	1
IT Team	2	1.5	3
Business Development/ Pricing Team	1	4	5
HR Team	1	1	3

Notes:

1: Interests/Influence: 1 – Very Low; 2 – Low; 3 – Medium; 4 – High; 5 – Very High.

2: Response: 1 – On board; 2 – Agree; 3 – Uncertain; 4 – Slightly disagree; 5 – Disagree.

The evaluation results are expected to vary by business and activity. For example, for ERM activities that promote cyber risk management, the IT team will have a high interest, while when it comes to managing economic risks they may have much less interest.

Another complication is whether the analysis should be based on the current status or the target status of the organization. In general, when determining engagement strategies, stakeholders' interests should be rated based on the target status. Even if an internal stakeholder does not

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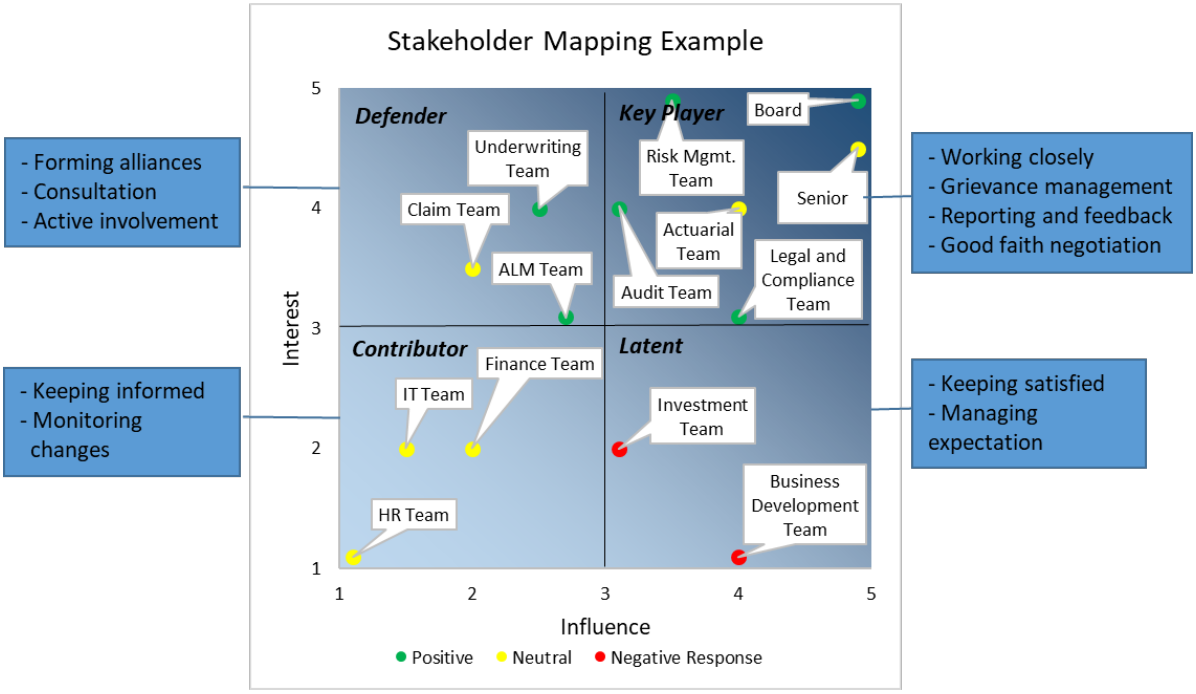
show enough interest at a given moment, that does not mean that engagement strategies should be set based on current status. Rather, more engagement effort should be put in to improve that stakeholder's interest. On the other hand, influence and responses should be evaluated based on current status, as those have a direct impact on how difficult it will be to get ERM buy-in and what engagement strategies will be appropriate. Stakeholders with negative responses need more engagement effort.

Based on the illustrative evaluation of stakeholders in Table 1, stakeholders can be mapped to different types, as shown in Figure 5.

Figure 5
Sample Stakeholder Mapping



Stakeholders can be divided into four classes based on their interest and influence: key player, latent, defender, and contributor. Key players are stakeholders with both high interest and high influence. They need full engagement if ERM activities are to be successful. Defenders are usually helpful allies for providing useful information and defending the risk team's positions in the group decision-making process. Latent stakeholders need to be informed adequately, but not so much that they get overwhelmed. Contributors are the least affected by or involved in ERM activities, but need to be kept informed to avoid any surprises. Different key engagement strategies are associated with different types, as shown in Figure 4. The strategies, however, are not exclusive to a certain stakeholder type, and can be used for other types as well when needed.

Response, the third dimension, is reflected by the color of the dots representing the stakeholders in the circle in Figure 5. Stakeholders with negative response need more focus within each group.

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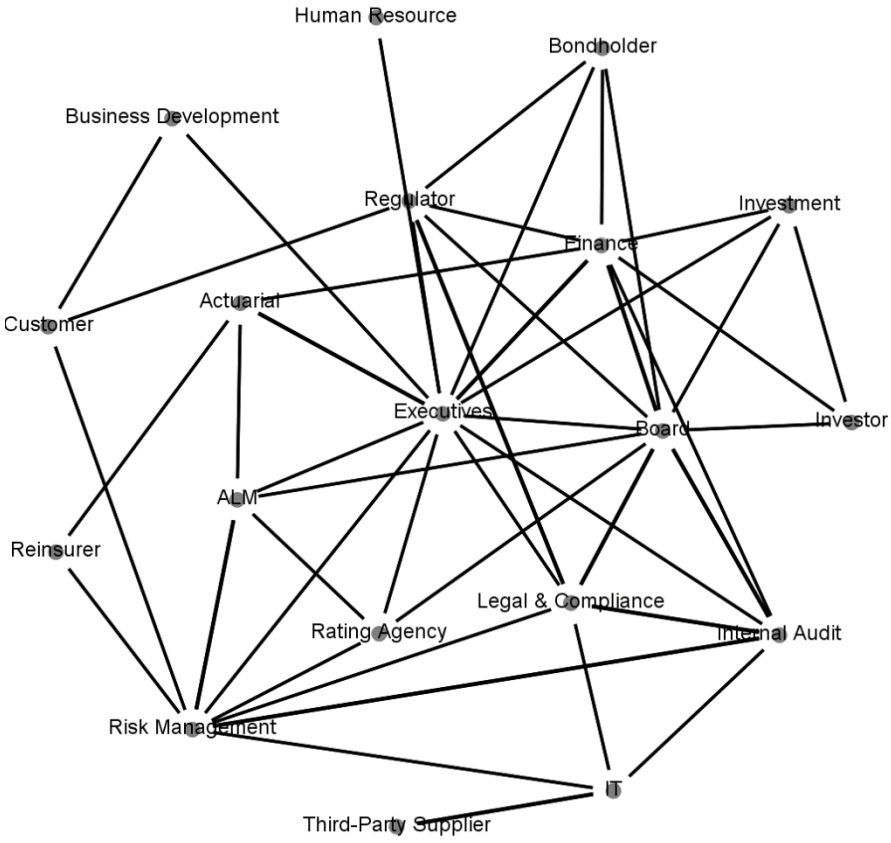
Stakeholder mapping is not constant for all risk management initiatives. A stakeholder may belong to different types, depending on the specific ERM activity. Changes in stakeholder mapping should also expected as stakeholders gain more knowledge and experience related to risk management. Therefore, the map needs to be updated regularly.

Another useful exercise is to understand the relationships among stakeholders. This is helpful for forming alliances, building trust, and negotiation, which are critical for conflict resolution. Relationships can be evaluated based on the amount of joint effort, location closeness, common interests, the network of people (friendships) and so on. Figure 6 illustrates a sample analysis, with close relationships shown as lines. A pair of nodes without lines between them indicates a loose connection or bad relationship. It clearly shows the centers in the example network: The Board, Executives and Finance, followed by Risk Management, Internal Audit, and Legal & Compliance.

Figure 6

Sample Stakeholder Relationship Analysis



Like stakeholder mapping, relationship analysis can identify the most influential stakeholders. Unlike stakeholder mapping, it also identifies a stakeholder's partners. To improve the relationship, negotiate a solution, or solve a conflict with a stakeholder, getting the stakeholder's

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key partners' support is invaluable. Stakeholder relationship analysis may be more useful in big organizations. These organizations have large networks of employees and require a high level of understanding and tracking of the relationships among stakeholders. Ideally, relationship analysis should be conducted at the individual or small group level. In the end, it is the individuals who will communicate with each other and make progress.

In the presence of bureaucracy, relationship analysis is also important to finding opportunities to get buy-in from certain stakeholders. Even though it is not the ideal approach, it may be helpful for short-term risk management achievements. In the long run, improving corporate culture is still the answer to bureaucracy.

4.2 Communication

Communication is the key factor in almost all stakeholder engagement efforts. Good communication helps stakeholders understand the risk, and the pros and cons, of different risk management strategies. Common strategies for effective communication, such as knowing your audience, listening, and being empathetic, genuine, and open-minded are applicable to communication with ERM stakeholders as well.

To improve ERM stakeholder engagement, it is important to communicate the tone from the top within the organization. The attitudes of the Board and executives toward risk management are reflected in the company's risk appetite statement and risk policies. Through a variety of communication channels, such as a team meeting or an education session, stakeholders can get a clear idea of corporate strategies for risk management. Education is the most appropriate approach for improving stakeholders' understanding. However, persuasion may be needed as well at the beginning of the process to get stakeholders' attention. Persuasion may include mandatory learning and policies to be followed. Methods of communication may be chosen depending on stakeholders' preference. In general, survey responses tell us that small-group, one-to-one meetings are preferred. However, large-group town hall meetings may be used by large companies, as indicated by a very high rating for such meetings by some survey respondents.

Knowing your audience is always critical for effective communication. An audience member's background, knowledge, experience, and position are formative for his/her attitudes and opinions. Estimating how stakeholders perceive different risk management options is valuable when designing communication plans to persuade stakeholders with new information or proceed with compromise. Communication needs to be tailored to deliver the message better, meet needs, and address concerns. Communication strategies need to be relevant to the audience's opinions, choices, and goals.

Timely and sufficient information disclosure starting in the early stages can help avoid misunderstandings and inefficient communication. When passing a lot of information at the same time, data visualization should be used.

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Evidence-based communication is more convincing and should be used as much as possible. This is especially important for risk management, an area in which evidence regarding extreme conditions is limited. Efforts need to be made to collect evidence from a broader area. Data in other fields can be borrowed to describe the possibility of an extremity after proper adjustment. For example, when communicating the severity of economic risk, historical data can be used not just from the local economy, but also from foreign economies. The Japanese recession of 1990 and negative European interest rates can be used when communicating the adverse scenarios possible for North American economies. When using these indirect types of evidence, it is important to articulate the possible path from current local economic situation to extreme foreign cases.

Risk is complicated, and it is not possible to understand all aspects, especially for emerging risks. Sharing the current understanding with stakeholders is important. By summarizing what is known based on past experience and scientific research, communication with stakeholders becomes knowledge sharing and discussion of possible actions instead of a defense of suggestions based on weak analysis.

In addition to one-way communication, active involvement of stakeholders in risk management efforts is very important to getting them on board. Stakeholders should be encouraged to provide input into the process and consulted about their interests, concerns, expectations, and opinions. When efforts are required of stakeholders, the purpose of these efforts and how they can help stakeholders' own work need to be communicated clearly. The reporting of results to stakeholders needs to be customized in order to be relevant to their interests and concerns.

Credibility is also an important factor for effective communication. Overpromising, exaggeration, and prediction without proper validation are detrimental to the trust between stakeholders and risk communicators.

Actionable suggestions need to be embedded in risk communication. Without risk mitigation or risk optimization plans for stakeholders to evaluate and choose from, the value of risk management can be underestimated. For example, presenting a company's risk exposure will not help unless it is supplemented with information on the optimal risk exposure level and plans to move from the current risk profile to the target risk profile.

An obstacle to communicating risk management concepts and analysis is their complexity. They often involve distribution, probability, statistical modeling, and financial mathematics. Technical materials need to be presented in plain language without unnecessary details. The key message should be concise and clear. It should be connected to things that stakeholders are familiar with, such as a historical event.

In a controversial situation, constructive coalition and good faith negotiation are needed to make progress and facilitate group decision-making.

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4.3 Training

The 2008 financial crisis brought a lot of attention to the insufficiency of corporate risk management. More stringent regulatory requirements, and many other risk management initiatives, such as internal capital models, model risk management, and the integration of risk appetite and strategic planning, are progressing well in the insurance industry. It requires a significant amount of extra effort to gain the knowledge and experience needed to make these changes. Existing employees need training, and risk professionals need to be hired.

Usually, training focuses on the second (risk management and compliance functions) and third (internal audit) lines of defense in a company. The first line of defense (operational management) may have less training than it needs. Training is best designed according to people's roles and prior knowledge of the subject. In addition to project-based knowledge training, it is helpful to have a long-term training plan for the Board, senior management, and employees. Knowledge gap analysis can be used to build personalized training plans. Figure 7 illustrates a gap analysis for risk management knowledge. The knowledge of risk management is classified into three categories: risk management framework overview, impact on business/work, and operational requirement. The gray part of each circle represents the percentage of knowledge that an internal stakeholder holds for a risk management knowledge item. The goal is to fill in the white part to remove the knowledge gap. Internal stakeholders are categorized into the Board, executives, and three lines of defense, including leader, middle management and remaining staff.

Figure 7

Sample Risk Management Knowledge Gap Analysis

Knowledge/Skill		Board of Director	Senior Manage-ment	1st Line of Defense			2nd Line of Defense			3rd Line of Defense		
				Leader	Middle Manage-ment	Other Staff	Leader	Middle Manage-ment	Other Staff	Leader	Middle Manage-ment	Other Staff
Overview	Risk Concept											
	Risk Appetite											
	Risk Governance											
	Risk Control											
	Risk Culture											
Business	Risk Related Work											
	Expected Engagement											
	Decision-Making											
	Feedback											
Operation	Risk Reporting											
	Risk Limit											
	Anti-Money Laundery											
	Cyber Security											
	Privacy											
	Social Media Policy											
	Risk Issue Escalation											

This illustrative gap analysis is not designed for risk professionals who need additional knowledge and skills to do sophisticated risk modeling and risk management, but rather to improve ERM stakeholder engagement. Based on this kind of analysis, training plans can be designed to close the gap by offering relevant training sessions in an appropriate format to individuals. The gap analysis can also provide useful input into hiring plans for risk management-related positions.

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The analysis may be simplified, depending on the size of the organization and the resources available for risk management training. Simplification can be done by assessing the gap based on small teams instead of individuals, or by narrowing the scope of knowledge/skills to focus on the most important ones.

The format of training is likely to be diverse, including online training, working groups, internal training sessions, workshops, mentoring, learning by doing, external training courses, seminars, and so on. The appropriate training format can be chosen based on the size of the company, the location, knowledge, experience, and position of the trainees, the content of the training, the urgency of the training, and the budget for the training. In any formats, a certain level of interaction during the training, feedback collection at the end of the training, and communication after the training are important for improving the training system. Gap analysis can be updated after the training and used for future training plans.

4.4 ERM Valuation

A company usually has multiple priorities competing for limited resources. The benefits of risk management are recognized in principle but may not be readily observed. This could put ERM priorities at a disadvantage in the competition for resources. Evaluating ERM activities is helpful for addressing this issue.

Benefits

1. Lower cost of borrowing. A risk management project may contribute to a better ERM rating by rating agencies. This rating is an important factor when determining the credit rating of an insurer. A higher credit rating can reduce the cost of issuing bonds in the capital market. Cheng (2013) studied the impact of ERM rating on Standard & Poor's credit rating, as summarized in Table 2. Rating anchor is the baseline S&P credit rating according to an issuer's business and financial risk profile assessment. The number in each cell represents the difference in credit grades from the baseline because of the ERM rating. When the ERM rating is adequate or below the baseline, the incentive for improving the ERM rating is greater. It provides a good reference for quantifying the contribution of ERM to a higher credit rating and therefore to a lower cost of borrowing.

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Table 2

The impact of S&P ERM Rating

Rating Anchor	ERM Rating				
	Very Strong	Strong	Adequate	Less than Adequate	Weak
AA+	0	0	−2	−4	−7
AA	0	0	−1	−3	−6
AA−	0	0	−1	−2	−5
A+	0	0	0	−2	−5
A	1	0	0	−1	−4
A−	1	0	0	−1	−3
BBB+	1	0	0	−1	−3
BBB	1	0	0	−1	−2
BBB−	1	0	0	−1	−2
BB+	1	0	0	−1	−2
BB	1	0	0	−1	−2
BB−	1	0	0	−1	−2
B+	1	0	0	−1	−2
B	1	0	0	−1	−1
B−	1	0	0	0	0

The benefit can be quantified based on several factors: the probability of getting a higher ERM rating and credit rating, the magnitude of borrowing-cost saving because of the potential credit rating upgrade, and the contribution of the risk management project to the rating upgrade. The probability of a rating upgrade can be estimated by assessing the gap between current practices and the requirements set by rating agencies. The expected cost savings can be determined based on the financing plan and the yield difference between two credit ratings. The contribution of the risk management project can be derived from analyzing peers' experience. For example, what proportion of peers with the target credit rating had similar projects? An example of a borrowing-cost savings estimation is shown in Section 5.1.

2. Risk mitigation benefit. In an adverse scenario, the benefit of risk mitigation is clear. However, such a bad scenario may not happen, and degree of severity is always uncertain. For consistency, the expected benefit of risk mitigation can be evaluated based on events at a given confidence level that is consistent with the company's risk appetite. The benefit could be the loss reduction because of a hedging program or a reinsurance arrangement.

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3. Capital efficiency. Risk management projects may reduce the risk and improve the capital and liquidity position of a company. As a result, the cost of raising capital can be lower. The benefit can be estimated as the reduction in capital cost (weighted average cost of capital × required capital) caused by either the reduction in required return on capital or the reduction in the amount of required capital. Here, the capital is that which is required to meet the company's risk appetite targets, such as the target credit rating. It is usually higher than the solvency capital required by regulators.

4. Better business decisions. Risk management projects could help senior management make informed decisions. Risk analysis can provide useful information about the trade-off between risk and return. It may be used to support strategic planning, including capital management, new business planning, and performance measurement. Theoretically, this benefit can be estimated as the probability of decision changes and the expected gain from the changes. In practice, it is difficult to have a credible estimate because of limited experience data. A possible way to measure the benefit is to compare the decisions with and without new risk analysis. By choosing a real business problem, the net impact of changing the decisions because of new risk information can be used as the estimated benefit. Given other factors that influence decision-making, this kind of benefit estimation may not be approved, especially during the initial period of application. However, it is a useful exercise to demonstrate the benefit of certain ERM activities.

5. Other cost savings. For example, for U.S. private sector defined-benefit plans, the premium rate paid to the Pension Benefit Guaranty Corporation depends on the funding ratio. Risk management projects can reduce volatility and may improve the long-term funding ratio. This could lead to reduced premiums. Operational risk management could also save costs caused by operational errors, failed procedures and systems, reputation deterioration, legal issues, and so on. These savings may be estimated based on company-specific experience or industry experience.

Cost

Three types of cost can be used to evaluate risk management projects.

1. Project expenses, including purchases of goods and services, human resources, training, office support, and other normal project expenses. These are similar to the costs encountered in normal investment projects.

2. Risk mitigation cost. Risk may be transferred by buying hedging instruments such as futures and options. The hedging cost needs to be considered in risk management decision-making. Risk may also be mitigated by dynamic trading in a dynamic hedging program. The transaction cost measured by bid-ask spread could be a significant part of the risk mitigation cost. Risk may also be transferred to a third party such as a reinsurer. At the same time, exposure to counterparty risk increases. Counterparty risk cost includes additional capital charges that may be caused by the credit deterioration of the

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counterparty. In an extreme situation in which the counterparty goes bankrupt, promised payments by the counterparty may be fully or partially lost. Based on credit downgrade probability, default probability, and recovery rate, expected counterparty risk cost can be estimated and used for risk management project evaluation.

3. Opportunity cost. Risk management may avoid or limit exposure to a risk, but the potential gain of taking the risk is lost. Therefore, opportunity costs need to be considered. The opportunity cost can be estimated as the expected return from the reduced risk exposure.

Quantification of the costs and benefits of risk management projects can be difficult and sometimes subjective. Expert opinions may be relied on in the presence of insufficient experience data. This situation is not unique for risk management projects. All new initiatives have an uncertain projection of the outcomes. When a credible comprehensive valuation of an ERM activity is not possible, quantification of individual benefits is still useful for demonstrating the value of ERM, and builds the foundation of future full-blown analysis.

With expected costs, benefits, and their timing, the net present value (NPV) and internal rate of return (IRR) of the project can be calculated.

$$NPV = \sum_{t=0}^{n} \frac{B_t - C_t}{(1+k)^t}$$

Where:

B_t: the amount of benefit during period t
C_t: the amount of cost during period t
n: the time horizon of the project
k: the hurdle rate that is required from the project

A positive NPV means that the project meets the return requirement. The IRR is the discount rate that makes the NPV equal to zero at the beginning of the project. Using measures that stakeholders are familiar with makes the value of a risk management project easier to understand.

Regulation-driven risk management projects can be leveraged and expanded to include other relevant ERM tasks. The marginal cost of adding extra tasks could be much lower than those for a separate project. NPV and IRR can be calculated using the marginal costs and benefits. In this way, resources are easier to get, and the efficiency of resource usage can be improved.

4.5 Validation

Sophisticated risk management models and their results are difficult for stakeholders to understand. Without the occurrence of a stress scenario, the benefit of risk management is implicit and may not be obvious to stakeholders. Risk management models often analyze the loss distribution and associate an event with a probability. The determination of the probability could be very uncertain and subjective. For example, with a confidence level of 99.5 percent, risk

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management models need to make assumptions regarding what a 1-in-200-year event looks like. Consistent historical data is generally not available for such a long period. Structural changes are likely to happen in 200 years, meaning history will not repeat in the same way.

If risk management analysis can be validated, then stakeholders will have higher confidence in that analysis and it will be easier for them to accept ERM strategies and use risk-related information for decision-making. Even though a full validation is unlikely in a short time period, partial validation is still possible, and important for gaining the trust of risk management stakeholders. Less-severe events are observable and can be used for partial validation. With 10 years' experience, a 1-in-10-year event can be used to validate the result of risk management analysis, which often includes a variety of events at different confidence levels. Another way to validate the effectiveness of risk management is to predict the impact of a historical extreme event on the company if it happens again. For example, performance can be tested assuming that the 2008 global financial crisis or 2000 dot-com bubble happens again. In this validation, actual experience is not available, so predicted outcomes are used. Stakeholders will know what to expect in such an event, and will have a better understanding of the linkage between model results and real-world experience.

In addition to validating the model results, assumption validation is also important. Before the 2008 financial crisis, the stress scenarios used for evaluating risk tolerance were less severe than what actually happened during the crisis. This damaged the credibility of risk management. Compared to the Great Depression, which occurred during the 1930s, the 2008 financial crisis was less severe and much shorter. Clearly, the extreme events assumed in the models were less severe than indicated by history. A long history needs to be used when setting risk management assumptions so that the chances of getting adverse validation results in a short/medium period will be lower. This can improve the credibility of ERM models.

When communicating an assumed stress scenario with stakeholders, it is not necessary to assign a probability to the scenario. An alternative approach is to put the scenario in the context of history by ranking it among historical extreme events. It is easier for stakeholders to understand the severity of a specific historical extreme event against which risk management aims to protect.

4.6 Accountability

Accountability is very important for making sure that risk policies and strategies are actively followed within the organization. Three aspects of accountability can help improve ERM stakeholder engagement.

1. Risk ownership needs to be clearly defined so that each risk is actively monitored and managed. The owner of a risk is usually a set of people who have the most interest in and influence on the risk. Usually in the ORSA process, internal stakeholders are asked to identify their own risks. Stakeholders who are the owners of certain risks are requested to take an active role in risk management.
2. The roles and responsibilities of the CRO and the risk management team need to be clearly defined. This will set stakeholders' expectations correctly regarding the risk

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management function's jobs and behaviors. Risk management is everyone's job. A clear definition of roles and responsibilities can make sure that stakeholders' risk management responsibilities are not shifted to the risk management team inappropriately. Clear definition will also empower the risk management function and set its focus. Clarity also makes it easier to measure the performance of the CRO and the risk management team against their responsibilities.

3. Accountability can be enforced through incentives and ethics. Performance measurement can be linked to the success of achieving risk management goals. For example, incentive compensation is usually determined by a combination of personal and company performance. Risk-adjusted value measures can be incorporated into the scorecard used for senior management and risk owners to determine personal performance. Risk management goals can be considered in evaluating company performance as well. All internal stakeholders' bonuses should be affected by risk management. In addition, certain risk management requirements can be included in a code of conduct. By establishing accountability, internal stakeholders will have a higher level of motivation to get involved in risk management activities.

4.7 Culture

Risk culture reflects the attitudes and behaviors of a group of people regarding risk-taking and risk management. Culture is the essence of a risk management system in that it defines what behaviors are encouraged or discouraged. A good risk culture fosters the improvement of risk management from the inside of an organization. No matter how good risk management policies and models are, without a positive risk culture their full value is unlikely to be realized.

To address this, in late 2013 the Financial Stability Board issued a consultative document on supervisory interaction with financial institutions on risk culture. It considers failure to have a good risk culture as a root cause of financial crises, either systemic or idiosyncratic. In the NAIC ORSA guidance manual, risk culture that supports risk-based decisions is emphasized. IAIS ICP16 on ERM also talks about embedding risk culture in the company. Rating agencies also assess risk culture when rating the ERM practices of insurance companies.

A healthy risk culture is important for ERM stakeholder engagement, as it directly affects the attitudes and behaviors expected from ERM activities. A healthy risk culture may differ from company to company, but has the following desirable features:

1. Risk appetite is clearly defined and communicated by the Board and senior management.
2. The roles and responsibilities of risk management are clearly defined.
3. Ethics, codes of conduct, and professionalism are well-established and communicated.
4. People are encouraged to be open-minded, and different opinions are welcomed.
5. Risk failures are communicated in a constructive way. The focus is on learning rather than on blaming.
6. People identify, monitor, and manage risk actively and consistently.
7. Risk issues can be escalated quickly in the organization.

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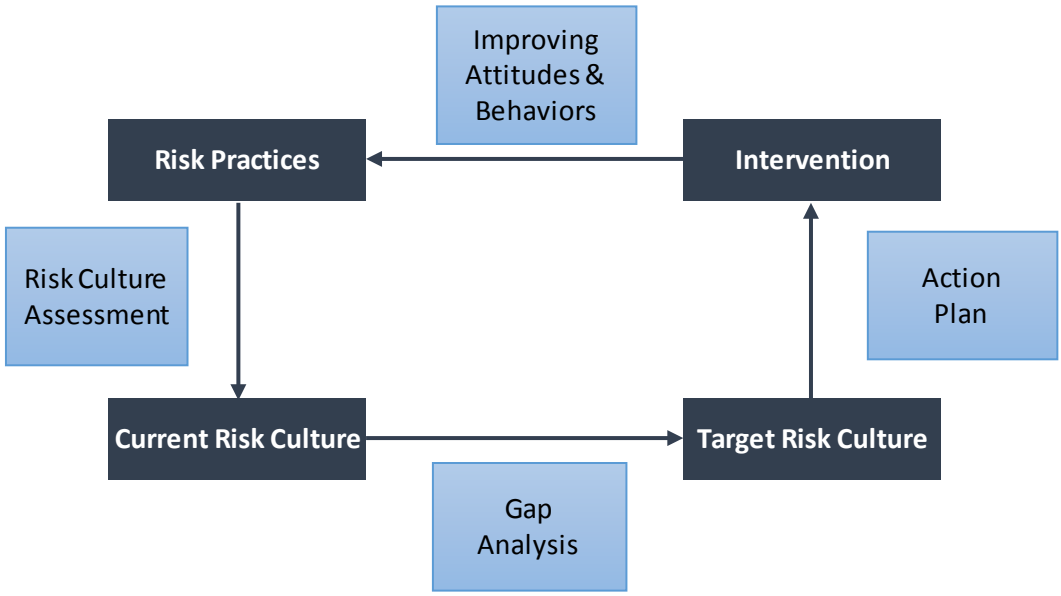
8. Decision-makers can get high-quality risk information in a timely manner.
9. Risk management is effectively communicated and maintains a high level of transparency.
10. Risk-adjusted metrics are used to measure performance.

Improving risk culture and ultimately ERM stakeholder engagement is a complicated and somewhat subjective process. As shown in Figure 8, risk practices need to be assessed in order for people to understand the current risk-culture status. Gap analysis can then be performed against the target risk culture. Action plans can be made to improve risk attitudes and behaviors in the organization.

Figure 8
Risk Culture Improvement Process



The first step in this process is to understand the current status of the risk culture. However, risk culture is not quantifiable. In many cases, risk culture is informal and difficult to assess. Risk attitudes determine behaviors and are an important component of risk culture. However, risk attitudes are difficult to measure because of potential inconsistency, human biases, and the lack of a standard approach. To assess the risk attitudes of internal stakeholders, it is critical that the assessment be confidential. An online anonymous survey is ideal for assessing risk attitudes because respondents are more likely to provide their true thinking without peer pressure, herding, and fear of retribution. Although the credibility of risk attitude assessment may be low, it may still provide insights into weak areas in risk awareness. The process is also a good opportunity to remind stakeholders of expected risk attitudes in the organization. Table 3 shows some examples of desired/undesired risk attitudes.

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Table 3
Sample Risk Attitude Assessment

Undesired Attitude	Desired Attitude
Risk management is mainly for risk control and meeting regulatory requirements.	Risk management is also important for business decision-making.
Risk is not good.	Risk is challenging, but also rewarding. Smart risk taking is fundamental to our business model.
Identifying risks is embarrassing and politically dangerous.	Identifying risks is the right thing to do.
Risk issues should be handled by the risk management team.	Risk issues should be handled together by all stakeholders.
Taking responsibility for a risk is dangerous.	Managing risk is beneficial and rewarding.

Most risk-culture assessments are based on risk behaviors, as they can be observed and are less subjective than risk attitudes. A few resources may be relied on for risk culture assessment.

1. FSB (2014) provides a list of collective indicators of a sound risk culture for systemically important financial institutions (SIFIs). Tone from the top, accountability, effective communication and challenge, and incentives are the four areas suggested for collective consideration, with each area including several key indicators. These indicators can be considered when assessing the current risk culture in an organization.
2. Rating agencies' ERM assessment and rating can provide some insights into risk culture. Corporate culture is an important consideration in ERM rating. For example, Omer and Manyem (2014) used risk tolerance measurement, executive compensation, and CRO direct reporting to assess the risk culture of insurers.
3. ORSA may also be leveraged to assess risk culture regularly. Even though an ORSA report may only disclose information on a company's target risk culture, risk culture assessment can be integrated into the ORSA process. Shang (2014) recommended a scoring system for risk culture assessment based on the ORSA. A checklist can be compiled based on findings through the ORSA process to help clarify the current status of risk culture and maintain a certain level of consistency of assessment among business units and across time.
4. External consultants may be engaged to conduct a risk culture assessment. Normally Board members, senior management, risk professionals, and other employees are interviewed to clarify risk practices, the consistency of real-world application, people's risk mindset, and so on. An advantage of using external consultants is the opportunity it affords to gain an understanding of the soundness of the company's risk culture compared to other players in the industry.
5. The Institute of Risk Management (IRM) (2012) laid out four aspects of risk culture self-assessment, including tone at the top (risk leadership and response to bad news),

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governance (accountability and transparency), decisions (informed risk decisions and reward) and competency (risk resources and risk skills).

Based on the culture assessment, gap analysis can be performed to identify areas for improvement. Table 4 illustrates a sample gap analysis and action plan based on the 10 assessment checkpoints used in Shang (2014). Each risk culture checkpoint is rated as weak, standard, or advanced, with an increasing level of healthiness.

Table 4

Sample Risk Culture Gap Analysis and Improvement Plan

Risk Culture Checkpoints	Current Status	Target Status	Improvement Plan
The company has a clear and consistent risk appetite statement.	Standard	Standard	None
Risk committees include final decision-makers.	Standard	Advanced	Recruiting more executives to the risk committees.
Senior risk managers have a strong influence on strategic planning.	Standard	Standard	None
Risk-adjusted measures are used for informed decision-making.	Standard	Advanced	Holding more training sessions on risk-adjusted measures and how they can be used in strategic planning.
Risk-adjusted measures are used for performance measurement.	Weak	Standard	Increasing the weight of risk-adjusted measures in bonus determination.
Enough qualified risk professionals are hired.	Standard	Standard	None
Enough communication and training on risk management.	Weak	Advanced	Conducting risk management knowledge gap analysis and building personalized training plan. Providing additional education session and networking opportunities.
Formal and effective risk issue escalation policy and process.	Standard	Standard	None
Whistle-blowing is encouraged and rewarded.	Weak	Standard	Enlist an executive sponsor.
Employees are encouraged to recognize their biases and make corrections.	Standard	Advanced	Better appreciation by management for error correction and more training on self-awareness of human biases.

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The preceding illustration is not meant to be comprehensive, but instead is only a small subset of possible situations. Exact practices of assessment, gap analysis, and intervention to improve risk culture depend on each company's specific situation and preference. The checklist can be expanded, and the assessment can be done at a more granular level to measure the gap between the current culture and the target culture. Appropriate interventions vary by company and risk issue as well.

With the eight areas of improvement previously described, Table 5 shows the specific areas that can be improved to address the challenges identified from the surveys.

Table 5

Sample ERM Stakeholder Engagement Challenges and Areas of Improvement

Challenges	Areas of Improvement
The benefit of risk management is difficult to recognize.	ERM Project Valuation; Communication; Culture.
Risk management projects may be affected by insufficient resources and internal politics.	Common Stakeholder Engagement Strategy; ERM Stakeholder Analysis; Training; Accountability; Culture.
Risk management may require material changes to existing practices and create additional work.	ERM Stakeholder Analysis; Training; Culture.
The role of the risk management function and the chief risk officer may not be clearly defined.	Accountability.
Risk management concepts are not widely understood.	Communication; Training.
The credibility of risk assessment results may be low.	Validation; Communication.
Model risk is high for risk management analysis.	Validation.
Risk management may be considered risk control.	Communication; Culture.

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Section 5: ERM Stakeholder Engagement Example

With systematic efforts to improve ERM stakeholder engagement based on the strategies discussed in the previous section, ERM will garner more support and become more effective. Strategies are chosen based on many factors, such as the degree of ERM maturity in a company; its risk culture; the importance, budget and the type of ERM project; and so on. This section illustrates the application of some engagement strategies to three ERM projects: introducing a new analytic infrastructure, product risk management, and performance measurement.

5.1 Analytic Infrastructure

In this example, an ERM valuation for building an Economic Capital (EC) framework is illustrated. An EC framework assesses capital adequacy in extreme events with fair valuation of both assets and liabilities. EC has been adopted by more and more insurers because of regulatory changes and the needs for consistent capital management. In Europe, Solvency II allows insurers to use approved internal models for determining required capital. These internal models are also based on the economic (fair value) framework. Regulators in some other jurisdictions are also considering similar changes and more economic value-based measurement. Multinational companies facing different capital regulations in different jurisdictions also need a consistent approach for capital allocation and optimization.

Given this environment, EC seems to be a good addition to the existing analytical tools. However, getting stakeholders' active involvement and buy-in is still challenging. EC is more difficult than factor-based approaches to determining capital. It requires stochastic modeling, more assumption-setting and model calibration. Stakeholders may feel overwhelmed by these concepts. It also changes the business model materially. Products with a shorter term, single premium, and a lower level of guarantee are preferred to those with a longer-term, regular premium and a higher level of guarantee, primarily because of reinvestment risk. The EC framework also includes a distribution of results and a chosen confidence level, which are difficult to validate. All these issues make the building and implementation of an EC framework very challenging.

This example illustrates the valuation of building an EC analytic infrastructure in an insurance company. By analyzing the benefits, stakeholders can understand the contributions that EC can make to the company's success in a more quantitative way.

Benefit

The main benefits of the EC framework that the company is looking for are enhanced risk analysis, consistent capital management, and risk-informed business decision-making. These benefits can be partially quantified through potential lower cost of borrowing and capital efficiency.

1. Lower cost of borrowing. The company's current S&P credit rating is A, with a less-than-adequate ERM rating. According to the general impact of ERM rating on credit rating

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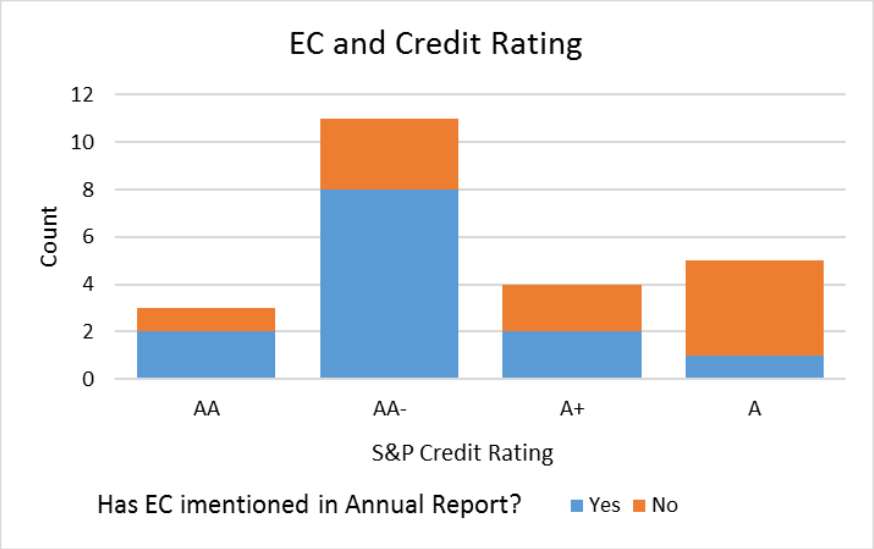
summarized in Table 2, if the ERM rating can be improved from “less than adequate” to “strong,” the credit rating may be increased from A to AA. The company plans to raise $1 billion of capital through debt in the next five years. Based on the maturity (10 year) and seniority (senior) of the bond to be issued, the yield is expected to decrease by 50bps. The contribution of the EC framework to a better ERM and credit rating also needs to be estimated. Figure 9 shows the S&P credit rating of 23 publicly listed insurance companies and whether EC is used. All companies had a credit rating no lower than A as of January 23, 2017. Out of the 23 insurance companies, 13 companies mentioned using EC in their annual reports.

Figure 9

Credit Rating and EC Framework



It is clear that the proportion of companies using EC increases with their credit rating. The correlation between credit rating and the use of EC is 38 percent. This percentage could be cited as the contribution of the EC framework to the potential credit rating upgrade and borrowing-cost saving. In practice, a percentage lower than 38 percent may be used to be conservative.

The introduction of a new EC framework may happen at the same time as other factors that jointly support the higher credit rating. The EC framework needs time to get set up and integrated into business management. Its impact on borrowing-cost savings will not be felt immediately after the project starts.

In this example, it is assumed that the EC framework will contribute 20 percent of the borrowing-cost saving starting two years after the project’s inception. Ten-year zero coupon rate bonds with a total face value of $100 million will be raised each year for the next 10 years. The savings start in the third year and continue through the tenth year. An annual savings amount is calculated as:

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$$\%\ of\ contribution \times credit\ spread\ change \times face\ amount \times Term$$

= 20% × 50 bps × $100M × 10 = $1M

2. Capital efficiency. The EC framework can be used as the basis for internal capital management. Economic capital can be managed to align with risk appetite targets such as the target credit rating. With the support of EC analysis, capital allocation will be more efficient and eventually reduce the internal capital requirement through capital optimization. Peer group experience and capital optimization plans can be used to estimate the potential savings. In this example, it is assumed that using the EC model will save two percent of the original internal capital requirement. The annual benefit in the third year can be estimated as:

$$\%\ of\ reduction \times original\ internal\ capital\ requirement \times CoC\ rate$$

= 2% × $10 B × 4% = $8M

The cost-of-capital rate is the difference between the weighted average cost of capital and the risk-free rate. The risk-free rate is usually the short-term government bond yield or swap rate. The benefit is expected to be effective from the third year through the tenth year. The capital base and therefore the benefit are assumed to increase by seven percent each year.

Other benefits, such as better risk selection, are even more difficult to quantify. Expert opinions and peer experience may be relied on for a rough estimation. However, the credibility of the quantitative evaluation may be jeopardized. Therefore, additional benefits are excluded from this example.

Cost

The initial project expense is expected to be $20 million. Annual cost is expected to be $2 million inflated by two percent each year. Inappropriate EC-based decisions could also incur opportunity costs, such as avoidable losses or foregone gains. Inappropriate EC-based decisions may be caused by model errors, assumption errors, and inappropriate use of the EC results. However, the opportunity cost may not necessarily be included in cost/benefit analyses. If it is believed and proved that there are fundamental errors in the EC approach, then building such a framework will not be considered. If potential errors are known based on peers' experience, then those errors will be avoided by improving the models and decision-making methods. These errors exist for other analytic frameworks as well. At the beginning of implementing the EC framework, decisions are likely to be made by considering the conclusions of several analytic frameworks together. Therefore, the impact of errors is limited. As more experience is gained using the EC framework, the rate of errors will gradually decline. In this example, the potential opportunity cost is not included in the analysis, because of its limited impact and high uncertainty.

With the quantification of the cost and benefits, the NPV and IRR can be calculated and compared to other projects. This will help stakeholders understand and evaluate the value of building the EC framework using measures with which they are familiar.

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Table 6 lists the project cash flows with a 10-year time horizon. With a hurdle rate of 12 percent, the NPV equals $9.69 million. The expected project return is 19.5 percent.

Table 6

EC Framework Cost and Benefit Analysis Example

	Hurdle Rate	12%	IRR	19.5%
	NPV	$9.69		
Time (Year)	**Project Cost ($M)**	**Borrowing Cost Saving**	**Capital Cost Saving**	**Net Cash Flow**
0	−20.0	0	0	−20.0
1	−2.0	0	0	−2.0
2	−2.0	0	0	−2.0
3	−2.1	1	8.0	6.9
4	−2.1	1	8.6	7.4
5	−2.2	1	9.2	8.0
6	−2.2	1	9.8	8.6
7	−2.3	1	10.5	9.2
8	−2.3	1	11.2	9.9
9	−2.3	1	12.0	10.7
10	−2.4	1	12.8	11.5

This kind of analysis is not intended to replace qualitative analysis, which is important for evaluating new initiatives. However, it helps explain to stakeholders the importance of building a risk-based analytic infrastructure. This example assumes that the project will start soon. Shang (2016) studied the project timing consideration for investment in building an EC framework. Valuation analysis can be enhanced when the timing of the project is not determined.

In addition to the project valuation analysis that is usually conducted before the approval of the project, communication and training are also very important for implementing the EC framework. Stakeholders need to understand why and how to use information provided by the EC framework in their business decision-making.

5.2 Product Risk Management

New product development and existing product management are important parts of the risk management framework's first line of defense. Product risk management policies are usually put in place to ensure that the business been written is within the company's risk appetite. However, to integrate risk management into product management, the following issues need to be addressed:

1. Risk constraints may conflict with product competitiveness. Product risk management may be seen as an obstacle to marketing efforts.
2. Risk-based product profit testing could be difficult for stakeholders to understand.

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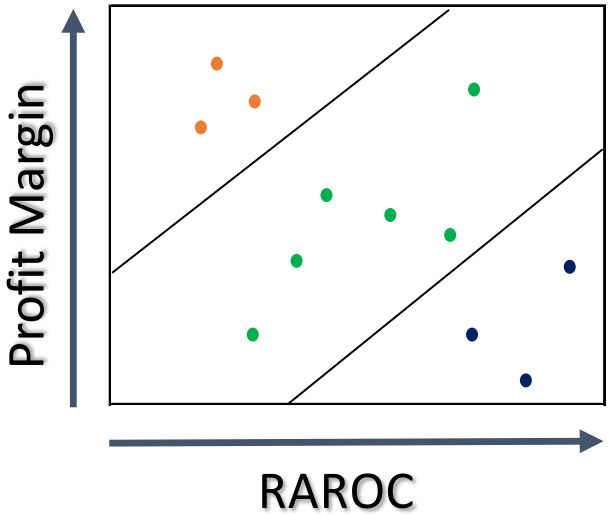
3. If similar risk constraints are not adopted by other market players, product risk management may be blamed for marketing failure.

Only when stakeholders understand the policy and their concerns are addressed in the context of business development can product risk management be effective. A few strategies may be used to improve stakeholder engagement, including **tailored training** and **communication**.

1. Training on product risk management policies is important. The alignment of product risk management and corporate risk appetite needs to be demonstrated to stakeholders. Risk-adjusted measures such as market consistent embedded value at time zero (MCEV0) and risk-adjusted return on capital (RAROC) may be used to evaluate the risk and return of each product. A minimum RAROC or a minimum MCEV0 as a percentage of the present value of premium payments may be required for all products. These profit measures need to be explained to stakeholders. Analysis of the difference between traditional measures and risk-based measures for existing products can be done to set stakeholder expectations. Figure 10 shows a sample analysis of insurance product profitability based on premium margin and RAROC. Green dots represent products without much difference under both measures. Blue dots represent products that are preferred using the risk-based measure. Yellow dots represent products that are favored under the traditional measure.

Figure 10
Product Profitability Measure Comparison



2. Communication with stakeholders needs to be straightforward. Risks and products that do not align with the company's strategy should be pointed out directly. Product features such as flexible premium and benefits that can reduce risk exposure should be discussed with stakeholders to identify creative solutions that will not endanger the company's market competitiveness.

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3. The implementation of product risk management policies cannot be achieved in one day. Original measures may need to be used with new measures in parallel to allow stakeholders to spend time digesting the new measures. However, it is important to set a specific plan to phase out the original measures.
4. Sometimes, marketing campaigns are important for acquiring new customers. They have long-term benefit for business growth in addition to their short-term impact on few products. Minimum requirements on risk-adjusted measures should be applied with consideration for their long-term impact. As long as the risk-adjusted return meets the requirements at the aggregate level, cross-subsidy among products should be allowed to give stakeholders more room for setting product and marketing strategies.
5. It is important to understand peer company status of incorporating risk considerations into product management. For a market leader on product risk management, it is difficult to compete on products that are not favorable under the risk-adjusted evaluation system. Short-term flexibility can be given to maintain a product's attraction for customers.

5.3 Performance Measurement

Linking performance measurement with risk management gives people financial incentives to improve ERM stakeholder engagement and risk culture. However, building the linkage is very challenging and may face setbacks when it is not well designed and communicated. The online survey results show that risk management has not been widely embedded in performance measurement. Risk professionals consider it only a slightly effective method for improving stakeholder engagement. The goal of motivating people to consider risk when making business decisions can only be achieved if risk-based measurement is understood, can be validated, and is agreed upon. To improve the effectiveness of risk-based performance measurement, efforts can be made in the areas of training, communication, accountability, and validation.

Risk management can be included in performance measurement in several different ways to improve stakeholder engagement.

1. The success of risk management can be determined against preset goals such as maintaining a target credit rating, capital position, or earnings volatility metric. If the company has a clearly stated risk appetite, measurement can be based on the gap between current risk profile and the risk appetite.
2. The number and magnitude of incidents of breaking risk-related ethics and policies can be considered in performance measurement as well.
3. Risk-adjusted measures such as market consistent embedded value (MCEV) or RAROC can be used to measure performance. Both measures include the cost of required capital based on the risk profile.

The first step is to help stakeholders understand that risk management is everyone's responsibility. Risk appetite and risk management goals need to be communicated clearly by executive management so other stakeholders know they are high-level corporate risk strategies. Concepts such as capital at risk (CaR) and earnings at risk (EaR) need to be explained in plain

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language. For example, a 99.5 percent confidence level can be described as a 1-in-200-year event. Alternatively, historical extreme events can be used to describe the severity against which the company's capital and earnings are being protected.

Standard Approach

- CaR: The company will not lose more than 30 percent of its available capital with a probability of 99.5 percent.
- EaR: The company will not have negative annual earnings with a probability of 95 percent.

Easy-to-Explain Approach

- CaR: The company will not lose more than $3 billion if the 2008 financial crisis happens again.
- EaR: The company will not have negative annual earnings for events less severe than the 1987 "Black Monday" stock market crash.

Sufficient training needs to be provided to make sure stakeholders understand the company's risk appetite and risk management goals. They can be incorporated into the goals used to assess the company's performance. Each stakeholder's bonus amount can then be determined by not only personal performance but also company performance.

Once codes of conduct and risk policies have been set up to ensure that business management is aligned with risk appetite and risk management goals, stakeholders will have more concrete guidance to follow. The number of rule-breaking incidents and the magnitude of deviation can be used for personal performance measurement. Some risk policies set risk limits for business operations, such as the maximum amount of stock investment allowed, the credit quality of counterparties, and the maximum net amount at risk to be retained. The limits may be seen as unwanted constraints by stakeholders. Consultation with affected stakeholders is critical to getting their agreement on limits. Limits need to be put on key indicators that have already been used for regular business management. This will make the limits easier to understand and follow.

It is also necessary to let stakeholders know how the limits are set according to the corporate risk appetite. For example, quantitative analysis can be conducted to show that if equity investment exceeds a certain percentage, the target CaR and EaR will be exceeded. The analysis needs to be reviewed and agreed to by stakeholders. Limits should be set with flexibility so that stakeholders' knowledge and experience can be used to earn extra returns within the risk appetite of the company. A limit does not need to be a single value but a range.

Incorporating risk appetite and risk policies into performance measurement only adds new components to the existing measurement system. However, changing from return-based evaluation to risk-adjusted evaluation is more dramatic. Risk-adjusted measures such as MCEV and RAROC are more complicated than return-based measures. They could completely shift the preference for different business lines. It could take time for stakeholders to accept the new measures. The following considerations may make the process more smooth and effective.

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1. Training on risk-adjusted measures needs to be provided to stakeholders. Comparisons between new measures and existing measures need to be provided for the function for which the stakeholders are responsible.
2. At the beginning, both the original measures and the new measures should be used, with the weight on the new measures gradually increasing.
3. The value of the measures is sensitive to risk model assumptions. Value changes caused by assumption changes should not be attributed to stakeholders, because such changes are out of their control.
4. Validation of the assumptions and results used in calculating risk-adjusted measures needs to be done based on historical data. It can be used to check the reasonableness of such measures and improve them continuously as new information emerges. The focus can be put on the stability of these measures by removing the impact of assumption changes.

Risk-adjusted measures can be used to measure the performance of the entire company and the performance of key functions such as investment, asset liability management, and business operations.

With risk appetite, risk policies, and risk-adjusted measures openly discussed and accepted by stakeholders and linked to their performance, a healthy risk culture and active stakeholder engagement are expected.

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Section 6: Conclusion

Risk management is a fast-growing area in the insurance industry. It has brought new concepts, tools, and methods to business decision-making. However, integrating risk management into business decision-making and corporate governance is still challenging. Ineffective ERM stakeholder engagement can occur because of inappropriate risk attitudes, lack of relevant knowledge and experience, insufficient resources, vague responsibilities, and unclear performance measurement.

ERM stakeholder engagement can be improved using strategies applied widely in project management and business operation. The uniqueness of risk management initiatives requires special considerations in stakeholder analysis, communication, training, valuation, result validation, accountability, and risk culture. With a systematic approach to improving ERM stakeholder engagement, the effectiveness and maturity of ERM can be enhanced, and risk management can be more deeply embedded in business decision-making.

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Appendix A: ERM Stakeholder Engagement Questionnaire for Risk Officers

1. What is your role in the risk management function?

   External Risk Management Consultant/ Chief Risk Officer(CRO)/ Deputy CRO/ Financial Risk Manager/ Insurance Risk Manager/ Operational Risk Manager/ Internal Audit/ Legal & Compliance

   *External risk management consultants are asked to answer the questions based on their knowledge of the industry and experience with their clients.

2. What is your company's main business?

   Life/ Health/ P&C/ Banking/ Any combination/ Other (please specify)

3. What is your company's size by market capitalization?

   Below $1 billion/ $1B – $20B / $21B – $50B/ Above $50B

4. Is your company a reinsurance company?

   Yes/ No

5. What are the key external stakeholders in ERM initiatives? Please indicate their importance. (Very Important/ Important/ Moderately Important/ Slightly Important/ Not Important/ NA)

   a. Regulator
   b. Rating Agency
   c. Bondholder
   d. Investor
   e. Customer
   f. Reinsurance clients (If you work in a reinsurance company)
   g. Third-party suppliers (data, IT, etc.)
   h. Other (please specify)

6. What are the key internal stakeholders in ERM initiatives? Please indicate their importance. (Very Important/ Important/ Moderately Important/ Slightly Important/ Not Important/ NA)

   a. Board of Directors
   b. Senior Executives
   c. Actuarial Team
   d. Asset Liability Management Team
   e. Business Development Team (Sales, Marketing, etc.)
   f. Finance Team
   g. HR Team
   h. IT Team
   i. Investment Team
   j. Internal Audit

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k. Legal & Compliance
l. Other (please specify)

7. Please indicate internal stakeholders' supportiveness of ERM initiatives (Full Support/ Support/ Moderate Support/ Slight Support/ No Support/ NA).

   a. Board of Directors
   b. Senior Executives
   c. Actuarial Team
   d. Asset Liability Management Team
   e. Business Development Team (Sales, Marketing, etc.)
   f. Finance Team
   g. HR Team
   h. IT Team
   i. Investment Team
   j. Internal Audit
   k. Legal & Compliance
   l. Other (please specify)

8. What are the difficult parts in ERM stakeholder engagement? Please indicate the level of difficulty (Very Easy/ Easy/ Neutral/ Difficult/ Very Difficult/ NA).

   a. Getting financial resources (Competing with revenue/profit driven projects).
   b. Getting appropriate human resources (lack of knowledge and expertise).
   c. Building trust with stakeholders.
   d. Explaining ERM concepts, models and results to stakeholders.
   e. Demonstrating and quantifying the value of ERM to stakeholders.
   f. Getting support from the Board and senior executives.
   g. Overcoming internal politics.
   h. Other (please specify).

9. In what areas is ERM integrated with strategic planning in your company?

   a. Asset allocation
   b. Capital management
   c. New business planning
   d. Liquidity management
   e. Performance measurement
   f. Other (please specify)

10. In your opinion, how is the ERM function viewed in your company by other teams? (Strongly Agree/ Agree/ Neutral/ Disagree/ Strongly Disagree/ NA)

    a. People think that ERM is to meet regulatory requirements and set risk control. It has little, if not negative value for the company's business.

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b. People think that ERM is useful for smart risk selection and help improve the long-term value of the company.
c. People think that ERM concepts and results are difficult to understand.
d. People think that ERM models and analysis are difficult to validate and have doubts about them.

11. What methods have you used to improve ERM buy-in in your company? How effective are they? (Very Effective/ Effective/ Moderately Effective/ Slightly Effective/ Not Effective/ Not Used)

    a. Stakeholder analysis.
    b. Effective communication of difficult concepts.
    c. Relationship building and management.
    d. External stakeholder opinions (regulators, rating agencies and experts)
    e. Recruiting experts on stakeholder engagement.
    f. Embedding risk management goals into performance measurement.
    g. Communication of industry ORSA (own risk & solvency assessment) expectations.
    h. Others (please specify)

12. What approach have you used when communicating and consulting with ERM stakeholders? How effective are they? (Very Effective/ Effective/ Moderately Effective/ Slightly Effective/ Not Effective/ Not Used)

    a. Face-to-face interview.
    b. Workshop.
    c. Discussion group.
    d. Regular project meeting.
    e. Town hall meeting.
    f. Regular reporting.
    g. Other (please specify)

13. Any successful cases of ERM buy-in you want to share? (open question)

14. Any lessons you learned from failed cases of ERM buy-in you want to share? (open question)

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Appendix B: ERM Stakeholder Engagement Questionnaire for Internal Stakeholders Excluding Risk Officers

1. What is your current role?

    a. Board of Directors
    b. Chief Executive Officer (CEO)
    c. Chief Finance Officer (CFO)
    d. Chief Investment Officer (CIO)
    e. Chief Actuary (CA)
    f. Chief Marketing Officer (CMO)
    g. Chief Technology Officer (CTO)
    h. Other Senior Executives
    i. Actuarial Team
    j. Asset Liability Management Team
    k. Business Development Team (Sales, Marketing)
    l. Finance Team
    m. HR Team
    n. IT Team
    o. Others (Please specify)

2. What is your company's main business?

    Life/ Health/ P&C/ Banking/ Any combination/ Other

3. What is your company's size by market capitalization?

    Below $1 billion/ $1B – $20B / $21B – $50B/ Above $50B

4. Is your company a reinsurance company?

    Yes/No

5. How do you think about risk management in your company? (Strongly Agree/ Agree/ Neutral/ Disagree/ Strongly Disagree/ NA)

    a. I think that risk management is to meet regulatory requirements and set risk control. It has little, if not negative value for the company's business.
    b. I think that risk management is useful for smart risk selection and helps improve the long-term value of the company.
    c. I think that risk management concepts and results are difficult to understand.
    d. I think that risk management models and analysis are difficult to validate and have doubts about them.

6. How is your experience with risk management projects? (Strongly Agree/ Agree/ Neutral/ Disagree/ Strongly Disagree/ NA)

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a. I received enough information on risk management projects.
b. I received enough training to understand risk management policies and reports.
c. My interests and concerns been fairly reflected in risk management projects.
d. I have enough and appropriate resources to meet new risk management requirements.
e. I think risk management analysis/tools are helpful for my own work.
f. My performance measurement is linked to risk management.

7. In your opinion, what is the best part of risk management in your company? (open question)

8. In your opinion, what is the worst part of risk management in your company? (open question)

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Appendix C: ERM Stakeholder Engagement Survey Results

This appendix presents the results of the pilot survey and online survey results at a more detailed level.

A.1 Pilot Survey Result

Table A.1 lists the main findings from the interviews, with more common responses listed at the beginning of each category: opinions, issues raised or suggestions for improvement.

Table A.1

Main Findings of Pilot Survey

Opinions	1. All interviewees think ERM is useful not only for risk control and meeting regulatory requirement but also for strategic planning and risk selection. 2. ERM has made tremendous progress in the past five to 10 years and has achieved a higher level of acceptance than before. Communication gets better. The risk culture is improving at a satisfactory pace as well. 3. Some companies have embedded risk management goals in performance measurement. 4. In general, they feel that training/education are sufficient for second/third line of defense but need improvement for first line of defense. Two CROs feel that they are understaffed and need more people to focus on the business application of risk management.
Issues Raised	1. It is hard to get the Board and executives' buy-in on things that may happen in the future. In many cases, the attitude toward risk is reactive rather than proactive. 2. The benefits of many risk management projects are long-term. Their success is hard to measure, and it is difficult to get buy-in unless pushed by regulators. 3. Sometimes the product of risk management is a description of the risk profile without a mitigation plan. 4. The role of the risk management function is not clearly defined, and its goals are somewhat intangible. 5. Assumptions of stress scenarios seem unrealistic and inconsistent in some cases. They should not be used when making business decisions under normal circumstances. 6. Many analyses are requested from the risk management team without it knowing how the results will be used; the results are not communicated back to the team.
Suggestions for Improvement	1. Focus on areas where actions can be taken to optimize risk profiles and benefits can be realized in a relatively short time horizon. Two interviewees suggest putting more resources into operational risk management. 2. Objectives of the risk management function need to be clearly defined so that its performance can be evaluated in a more objective way. 3. Risk management functions need to take partial responsibility for the long-term performance of the company.

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	4. More efforts are needed to bring risk management to the decision-making table with a way to compromise with existing decision-making approaches.

A.2 Online Survey Result

Figure A.1 shows the geolocation of respondents based on IP address. Sixty-eight percent of the respondents are from the United States, followed by Canada (11 percent) and Hong Kong (four percent).

Figure A.1

Online Survey Respondent Geographic Information

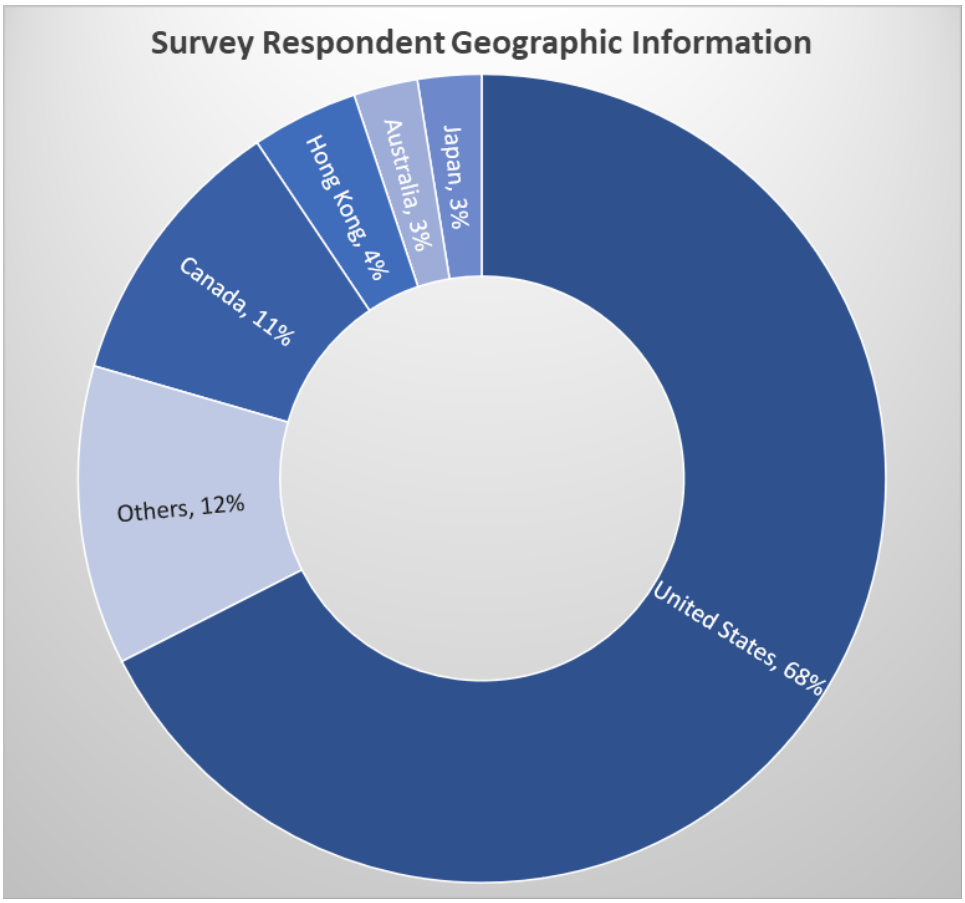

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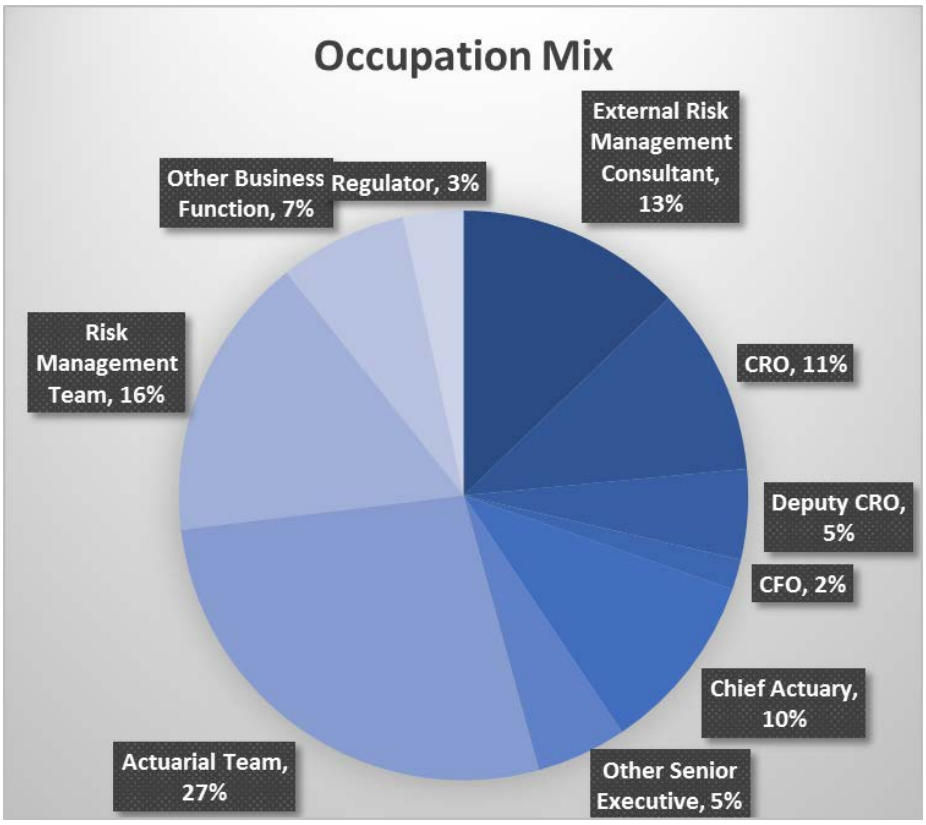
Figure A.2 shows the occupation distribution of the online survey respondents, most of whom are working in the areas of risk management and actuarial science.

Figure A.2
Online Survey Occupation Mix



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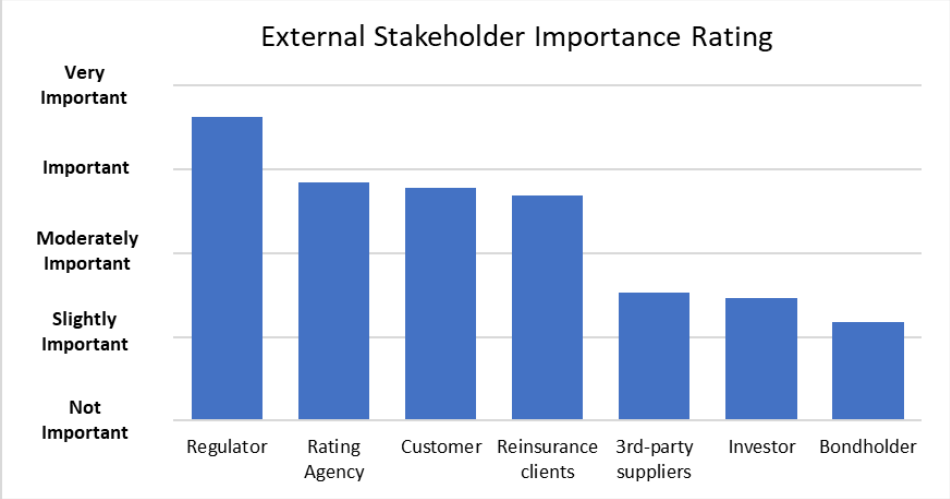
Stakeholder Importance Rating by Risk Officers

Risk officers were asked to rate the importance of ERM stakeholders, both internal and external.

For external stakeholders, regulators are considered the most important external stakeholders, followed by rating agencies, customers, and reinsurance clients, as shown in Figure A.3.

Figure A.3

External Stakeholder Importance Rating



For internal stakeholders, senior management is considered the most important internal stakeholder, with the business development team and HR team least relevant, as shown in Figure A.4.

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Figure A.4
Internal Stakeholder Importance Rating

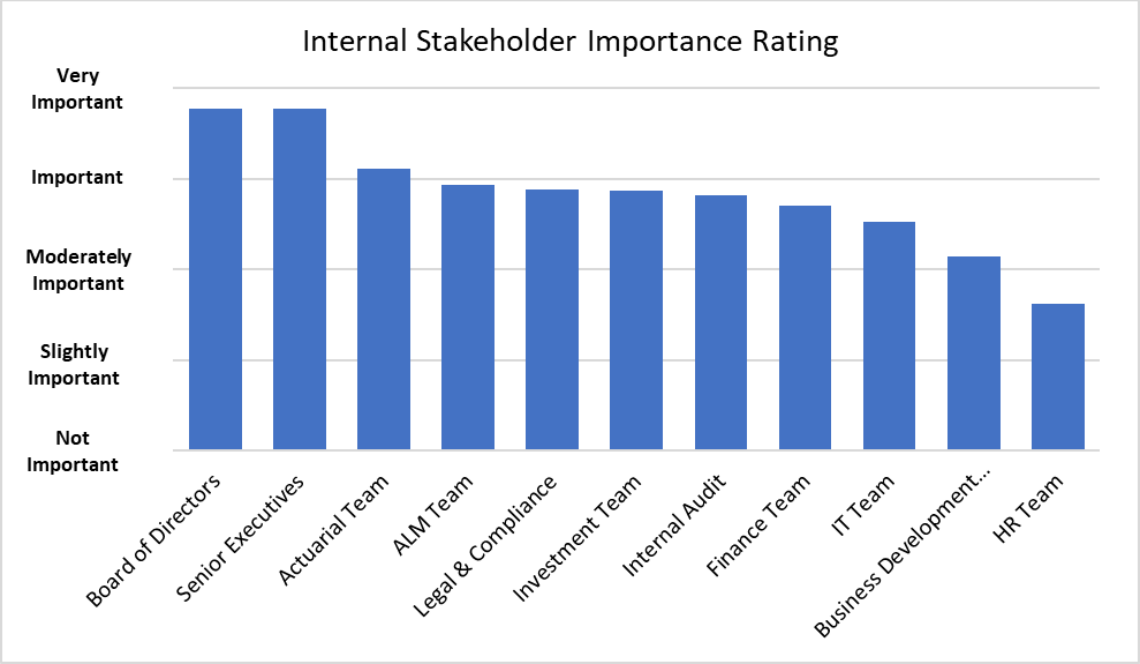

Figure A.5 shows both the importance rating and supportiveness of internal stakeholders. As expected, the level of importance is positively correlated with the level of support. The widest gap between importance and supportiveness is for senior executives, followed by the business development team, Board of Directors, internal audit team, and finance team. More efforts can be made to match support with importance for internal stakeholders with bigger gaps.

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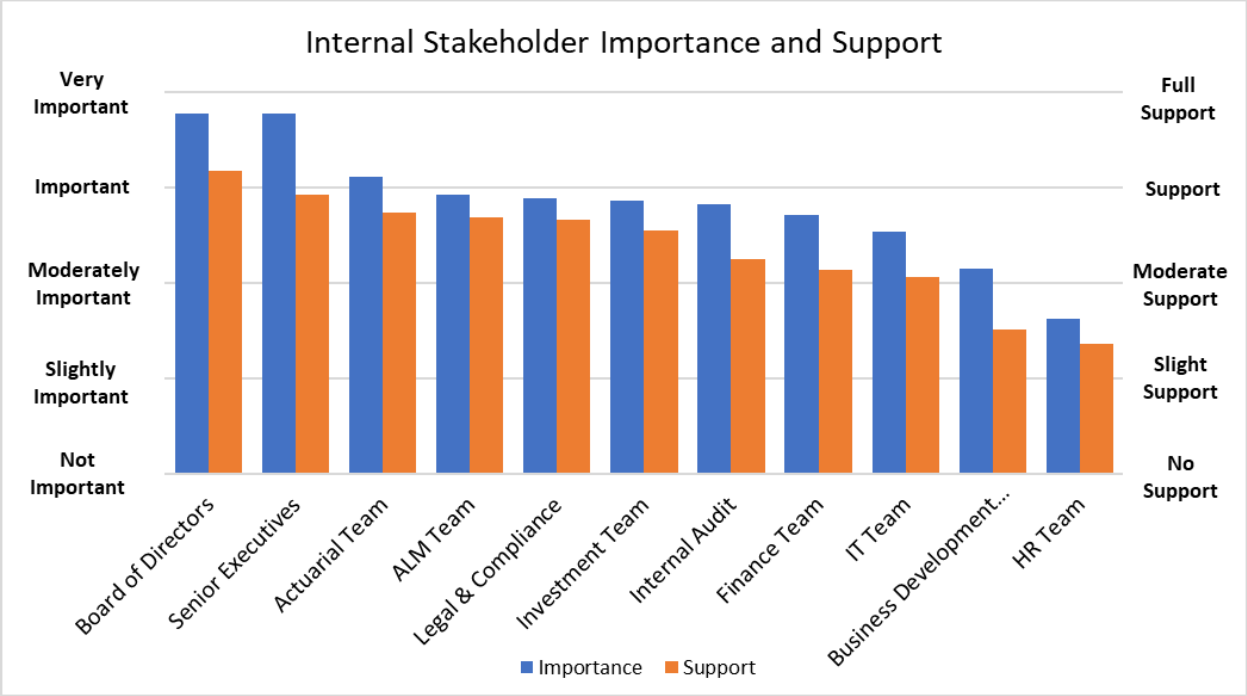
Figure A.5

Internal Stakeholder Importance Rating and Supportiveness



Opinions on ERM

Opinions on ERM were asked of both risk officers and internal stakeholders. The difference in the perception of how ERM is viewed in a company is quite marked between the two parties. In general, internal stakeholders have a more optimistic view of ERM development in a company than risk officers, as shown in Figure A.6.

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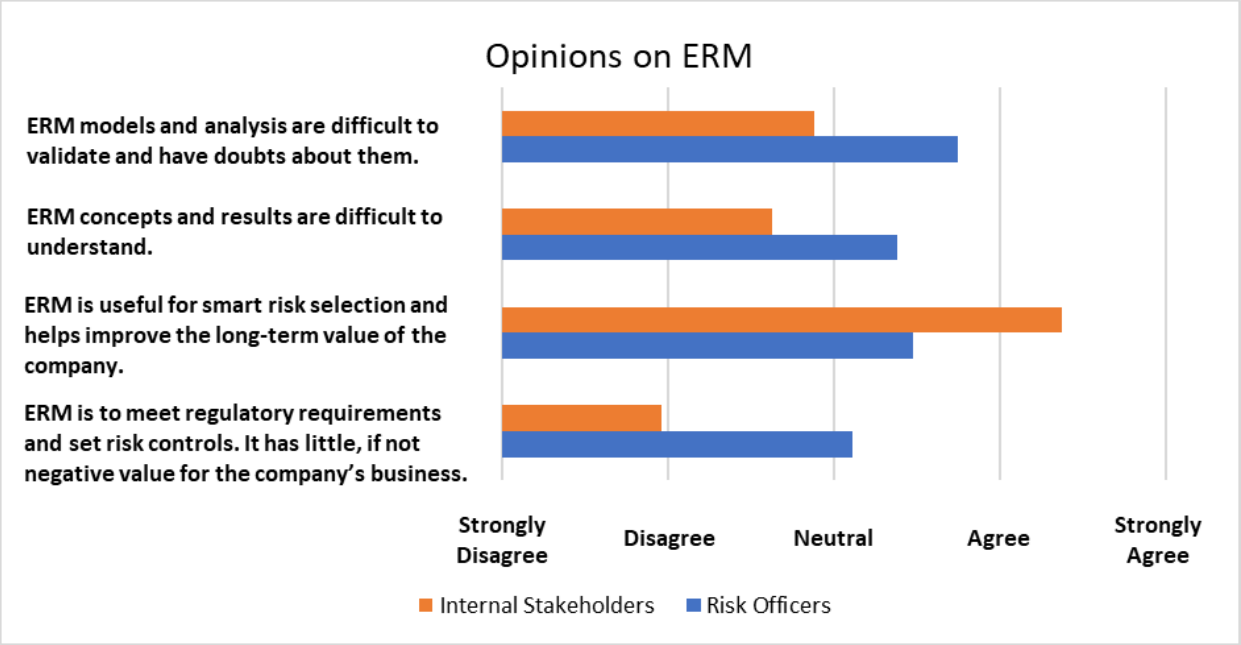
Figure A.6
Opinions on ERM



ERM and Strategic Planning

The integration of ERM and strategic planning is an indicator of how well ERM is accepted by a company. According to the survey responses, 80 percent of surveyed companies have embedded ERM in strategic planning in at least one area. As shown in Figure A.7, capital management is the most popular area for ERM application, followed by new business planning, liquidity management, and asset allocation. Only 25 percent have embedded ERM in performance measurement, which could be a potential area for improvement.

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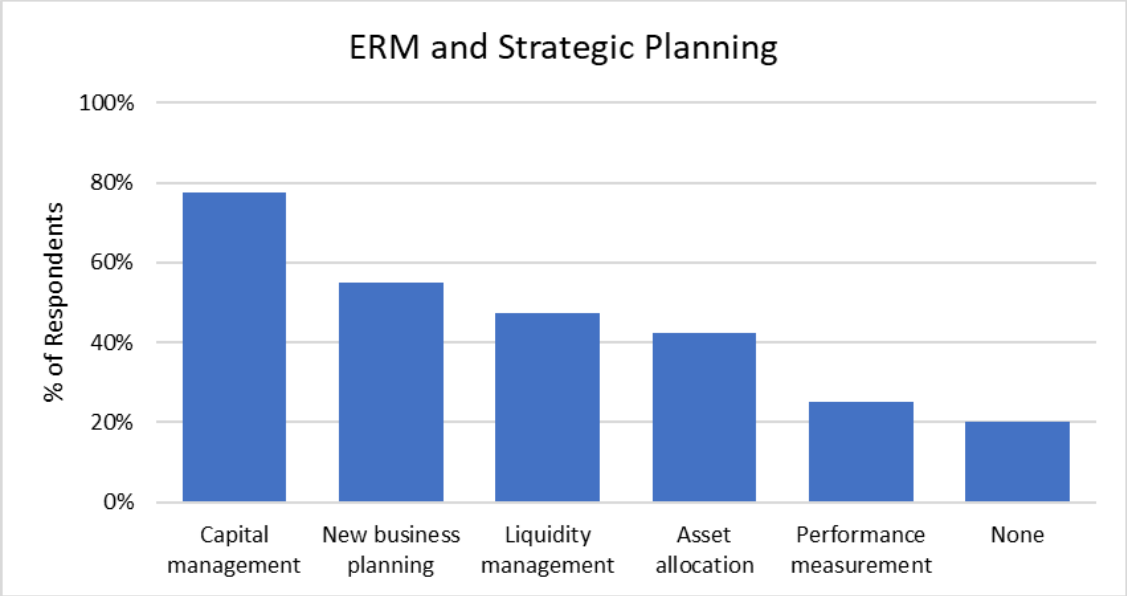
Figure A.7

Integration of ERM and Strategic Planning



Note:

None: Respondents indicated that ERM had not been integrated with any of the five areas.

ERM Stakeholder Engagement Challenges and Strategies

Risk officers were asked about ERM stakeholder engagement challenges. As shown in Figure A.8, getting support from senior management is the least-challenging issue. Demonstrating and quantifying the value of ERM is the most difficult one. Getting resources and overcoming internal politics are thought to be difficult by risk officers.

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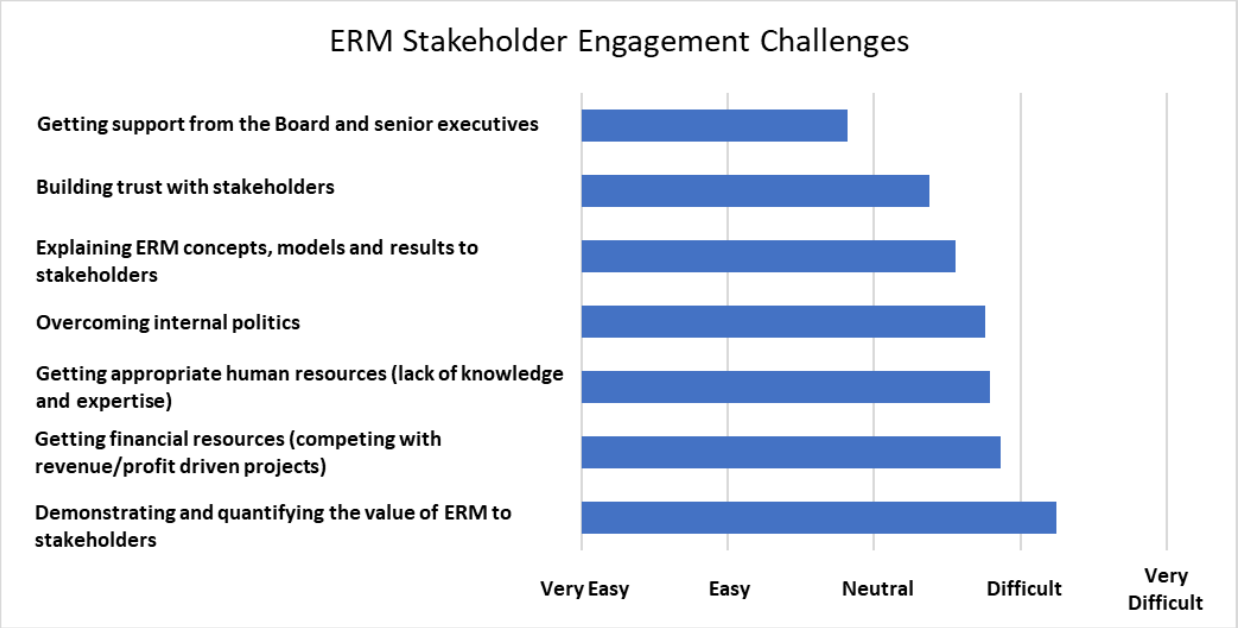
Figure A.8[1]

ERM Stakeholder Engagement Challenges



To overcome these difficulties, different methods can be used. Figure A.9 shows the usage and effectiveness of ERM stakeholder engagement methods as viewed by risk officers. Relationship building, external stakeholder opinions, and effective communication are the most effective and most used methods. Stakeholder analysis and embedding risk management goals in performance measurement are less used, but more than modestly effective. They may be used more widely to improve stakeholder engagement.

[1] Figures A.8 to A.10 are replicates of Figures 1 to 3 in the main body of the paper. They are kept here for the completeness of online survey result in this appendix.

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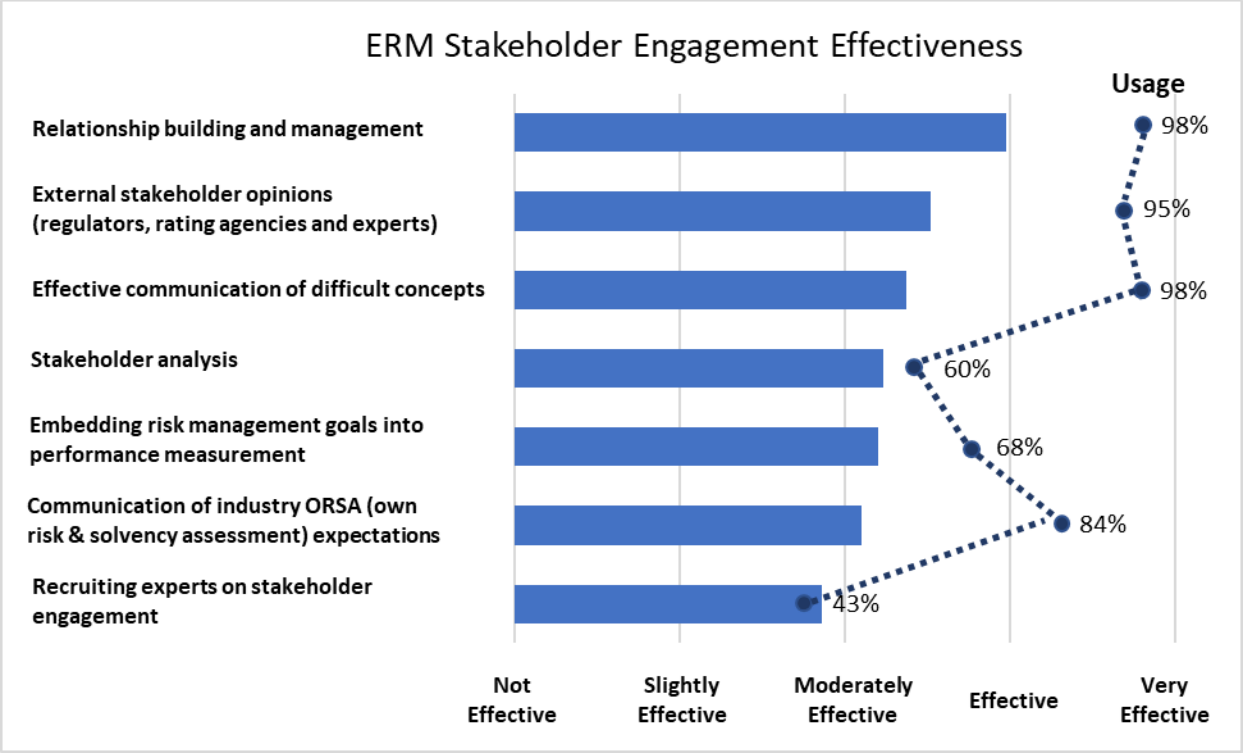
Figure A.9

ERM Stakeholder Engagement Effectiveness



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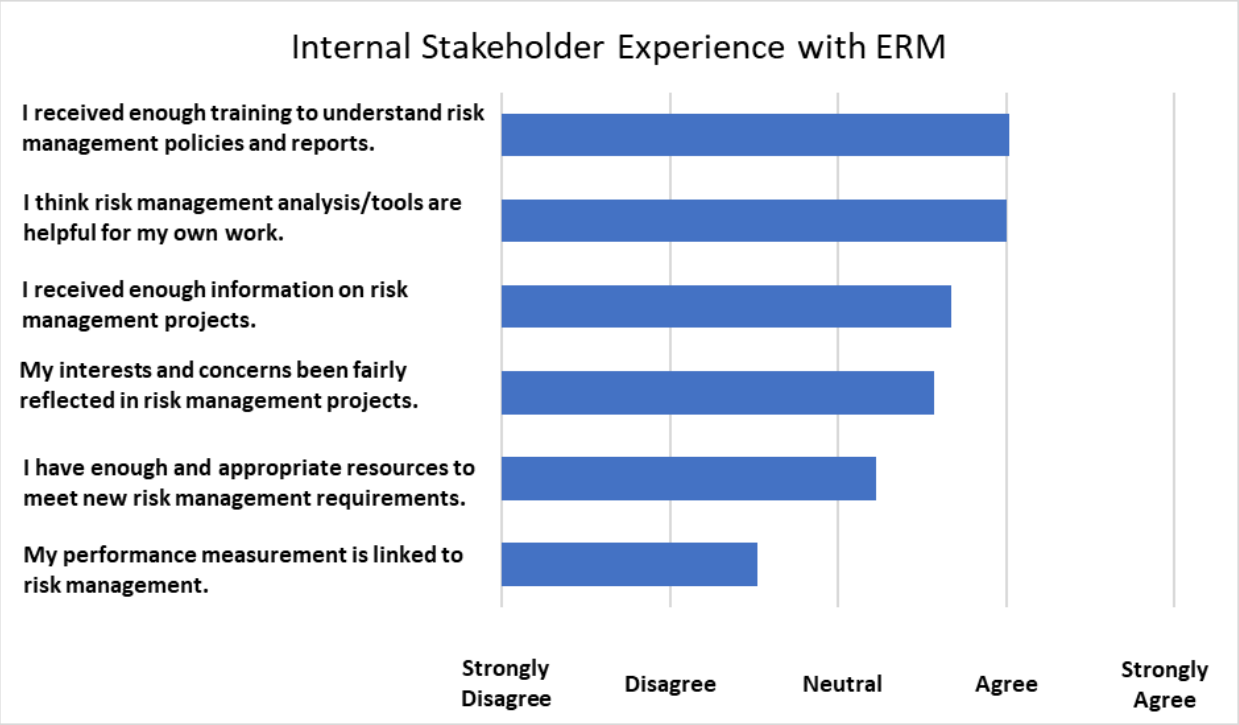
The results of ERM stakeholder engagement efforts are quite positive, as shown in Figure A.10. Although there is still room for improvement, internal stakeholders in general receive enough training and information on risk management, having their interests and concerns reflected in risk management projects, and they have found risk management analysis helpful. Resources to meet new risk management requirements may still be a constraint for internal stakeholders.

Figure A.10

Internal Stakeholder Experience with ERM



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The effectiveness of different communication methods is also evaluated by survey respondents. As shown in Figure A.11, a face-to-face interview is the most effective approach, followed by regular reporting and workshops. Town hall meetings are the least effective way to get ERM buy-in.

Figure A.11
Communication Effectiveness

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Risk officers were also asked to share successful cases of getting ERM buy-in and lessons learned from failed cases. Table A.2 summarizes the key findings.

Table A.2

Risk Officers: Tips and Lessons Learned in ERM Buy-In

Helpful Tips	1. Sharing stories in which ERM has led to actionable items and influenced decision-making. 2. Getting senior management's support is the key. 3. Face-to-face and small-group discussions with good preparation and relevant topics are useful for understanding the risk issues and developing mitigation plans. 4. Real understanding of internal stakeholders' issues helps. 5. ORSA reporting helps get people's attention and buy-in on ERM. 6. Getting the direct involvement of management in ERM activities is ideal and beneficial for future implementation. 7. Building a coalition with key partners in the company is very effective for getting support.
Lesson Learned	1. Internal stakeholders need risk training before they can do a good job on risk assessment and risk mitigation. 2. ERM metrics need to be aligned with how business is valued. Severe short-term fluctuation caused by factors out of management's control could erode credibility. 3. Internal politics and lip service hurt. 4. ERM metrics could shift the preference of different lines of business. It is useful to understand who is adversely affected and prepare for their reaction. 5. Using standard ERM terminology helps communication.

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Stakeholders excluding the risk management team were asked about the best and worst part of risk management in their company, as summarized in Table A.3. Though many of these items don't appear related to ERM stakeholder buy-in, they clarify how stakeholders view ERM processes.

Table A.3

Stakeholders' Views on Best and Worst Parts of Risk Management Practices

Best Parts	1. Open discussion of risks, understanding the most important risks, and taking action to address them. 2. Getting engagement and commitment from different functions and creating conversions among isolated groups. 3. Linking risk management with long-term business value through risk selection, capital management, and so on. Risk management is considered an important partner in making good decisions. 4. Meeting regulatory requirements, setting risk controls, and protecting the company. 5. Providing a holistic view of the entire company's risk in addition to a comprehensive view of each risk. 6. Knowledgeable regulators. 7. Intelligent and ethical CRO and risk management team. 8. Good analytical framework producing a range of possible results. 9. Risk management is customized to be concise, practical, and appropriate for the business. 10. Cyclical review.
Worst Parts	1. It is difficult and it takes a long time to achieve understanding, buy-in, and real support from people at various levels, especially for complex and new risks. 2. Resource and time constraints may mean failure to realize the true value and full potential of ERM. 3. Political resistance and use of ERM for political and bureaucratic reasons. 4. A misunderstanding of risk management as mere auditing and risk avoidance still exists. 5. Risk reporting requirements are time-consuming and tedious. 6. The role and responsibility of risk management is not clearly defined. 7. Communicating ERM strategies and requirements is sometimes difficult. Communication could take too much time that could be spent on real risk mitigation. 8. High model risk and poor documentation. 9. Lack of an internal model for risk quantification. 10. Lip service and vocal support that do not materialize.

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The online survey responses are also summarized in three dimensions: respondent role (internal risk officer/external risk consultant), business line (life/P&C), and company size (small/mid/large). This helps us understand the views and maturity of ERM in different types of companies.

Figure A.12 shows the business line mix of respondents' companies. Some companies have multiple business lines and are counted multiple times in the analysis. To understand the practices for a specific business line, responses for life and P&C insurance business are shown both aggregated and separately. Results are not aggregated for other business lines, because of insufficient responses. Only eight percent of respondents, excluding external consultants, are from reinsurance companies. Given the small number of responses for reinsurers, responses between direct insurance and reinsurance are not differentiated.

Figure A.12

Online Survey Business Line Mix

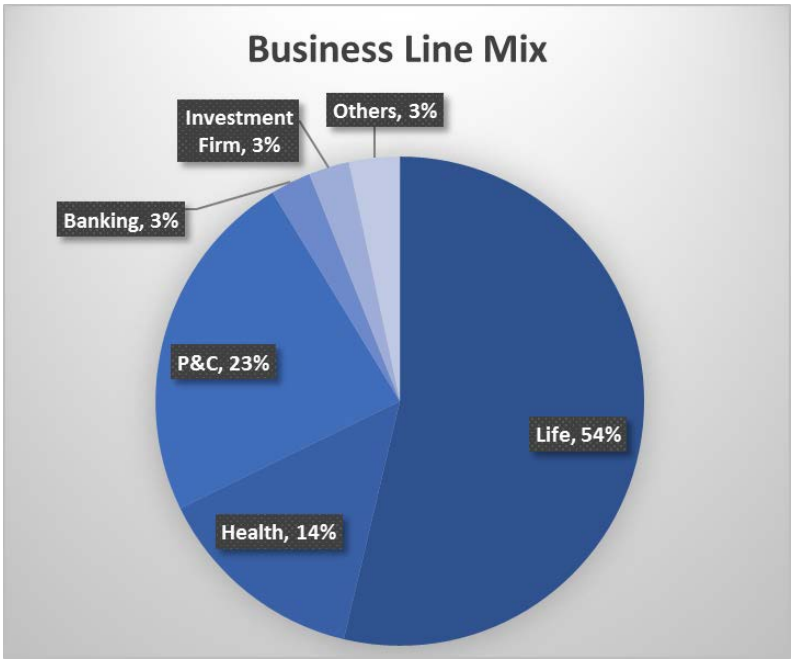

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Figure A.13 shows the distribution of company size measured by market capitalization, excluding external consultants. Company size may have an impact on the level of ERM buy-in, and responses are also compared by company size.

Figure A.13

Online Survey Company Size Mix

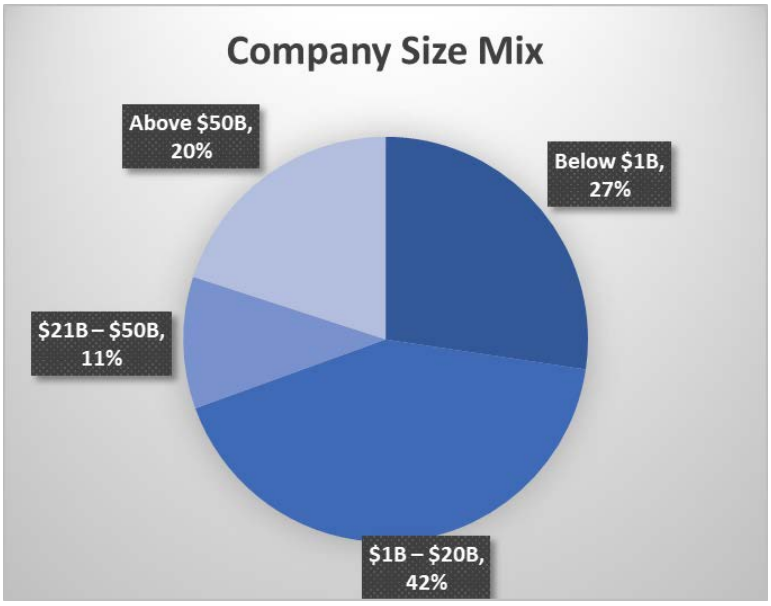

Table A.4 shows the importance of external stakeholders as perceived by survey respondents. External risk management consultants have the highest importance rating among external stakeholders, on average. In contrast, small companies with less than $1 billion market capitalization assigned a lower level of importance to external stakeholders. P&C companies consider reinsurance clients a more important external stakeholder than do life companies.

Table A.4

External Stakeholder Importance Rating

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Regulator	1.4	1.5	1.2	1.4	1.2	1.6	1.5	1.4
Rating Agency	2.2	2.3	1.9	2.2	2.2	3.9	1.8	1.9
Customer	2.2	2.1	2.4	2.2	2.2	2.7	2.2	1.6
Reinsurance Clients	2.3	2.6	1.8	2.6	1.3	4.0	3.0	2.0
3rd-party Suppliers	3.5	3.3	3.9	3.3	3.8	3.9	3.2	3.1
Investor	3.5	4.0	2.5	3.6	3.4	4.0	4.6	3.4
Bondholder	3.8	4.1	3.3	3.8	3.8	5.0	4.3	3.3

Note:

Scale: 1 – Very Important; 2 – Important; 3 – Moderately Important; 4 – Slightly Important; 5 – Not Important

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Table A.5 lists the importance rating for internal stakeholders except the risk management team, which is usually the project manager for risk management initiatives. Senior management is considered the most important internal stakeholder, with the business development team and HR team least relevant. Compared to internal risk officers, external risk consultants view the role of business development teams in ERM as less important. The ALM team and the business development team are considered more important internal stakeholders in life companies compared to P&C companies. This is likely to be caused by the different nature of their businesses. For example, ALM is less of a concern for P&C companies given their often shorter term of business and less exposure to interest rate risk. Mid-sized companies place a higher importance rating on internal stakeholders in general, compared to large and small companies. A possible reason for this is that mid-sized companies are the ones that can get the most marginal benefit from improving ERM. Large companies may have already achieved most of the benefits, and small companies still have a long journey to achieve the major benefits of ERM.

Table A.5

Internal Stakeholder Importance Rating

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Board of Directors	1.2	1.2	1.2	1.2	1.2	1.3	1.1	1.4
Senior Executives	1.2	1.3	1.1	1.2	1.3	1.6	1.2	1.2
Actuarial Team	1.9	1.9	1.8	1.8	2.1	2.1	1.8	2.0
Asset Liability Management Team	2.1	2.0	2.2	1.9	2.5	2.7	1.9	1.6
Legal & Compliance	2.1	2.1	2.2	2.0	2.3	2.4	2.0	1.9
Investment Team	2.1	2.1	2.3	2.1	2.0	2.3	2.0	2.0
Internal Audit	2.2	2.2	2.1	2.1	2.4	2.9	2.2	1.9
Finance Team	2.3	2.3	2.3	2.2	2.2	2.4	2.3	2.2
IT Team	2.5	2.4	2.6	2.4	2.3	2.6	2.3	2.4
Business Development Team	2.9	2.7	3.3	2.8	3.3	2.9	2.5	2.7
HR Team	3.4	3.3	3.6	3.4	3.8	3.4	3.1	3.4

Note:

Scale: 1 – Very Important; 2 – Important; 3 – Moderately Important; 4 – Slightly Important; 5 – Not Important

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Table A.6 lists the perceived level of support from internal stakeholders. Senior management is the most supportive, and the business development team is the least supportive. Compared to external consultants, internal risk officers saw more support from internal stakeholders. Consistent with the importance rating in Table A.2, P&C companies provide less support than life companies, especially from the legal & compliance and ALM teams. The reason may be that some internal stakeholders are perceived as less relevant and not expected to provide much support. In general, small companies receive less support from most internal stakeholders. Mid-sized and large companies have similar levels of support from internal stakeholders.

Table A.6

Internal Stakeholder Supportiveness

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Board of Directors	1.8	1.6	2.3	1.7	1.8	2.3	1.2	1.6
Senior Executives	2.1	1.9	2.4	1.9	2.2	2.3	1.8	1.7
Legal & Compliance	2.3	2.0	2.9	2.0	2.8	2.6	1.7	1.9
Actuarial Team	2.3	2.4	2.2	2.2	2.4	2.7	2.2	2.3
Internal Audit	2.3	2.2	2.7	2.2	2.5	2.6	2.1	2.0
Asset Liability Management Team	2.4	2.3	2.8	2.2	3.0	3.4	2.0	1.9
Investment Team	2.8	2.6	3.1	2.5	2.9	3.1	2.3	2.5
Finance Team	2.9	2.6	3.4	2.7	3.2	2.9	2.8	2.4
IT Team	2.9	2.7	3.4	2.8	3.0	3.1	2.7	2.5
HR Team	3.5	3.2	4.2	3.2	3.7	3.3	2.8	2.9
Business Development Team	3.6	3.4	4.2	3.3	3.9	3.5	3.1	3.2

Note:

Scale: 1 – Full Support; 2 – Support; 3 – Moderate Support; 4 – Slight Support; 5 – No Support

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Table A.7 shows the level of difficulty for ERM stakeholder engagement. Demonstrating and quantifying the value of ERM is the most difficult part. Financial resources and human resources are difficult to get. Internal politics are also a potential threat to the success of ERM projects. Building trust with stakeholders and getting support from senior management is less of a concern. External consultants see a higher level of difficulty than internal risk officers. P&C companies have a higher level of difficulty than life insurance companies, mainly in demonstrating the value of ERM, getting appropriate human resources, and overcoming internal politics. Mid-sized companies seem to have a better time addressing these challenges than large and small companies, especially in demonstrating the value of ERM, getting human resources, and building trust with internal stakeholders. Large companies have a more difficult time overcoming internal politics and getting support from their Boards and senior executives, compared to smaller companies.

Table A.7

ERM Stakeholder Engagement Challenges

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Demonstrating and quantifying the value of ERM to stakeholders	4.2	4.1	4.5	4.1	4.6	4.3	3.8	4.4
Getting financial resources (competing with revenue/profit driven projects)	3.9	3.6	4.4	3.7	4.0	3.7	3.5	3.6
Getting appropriate human resources (lack of knowledge and expertise).	3.8	3.6	4.1	3.7	4.2	3.7	3.2	4.1
Overcoming internal politics	3.8	3.5	4.2	3.5	4.1	3.4	3.4	3.8
Explaining ERM concepts, models and results to stakeholders	3.6	3.6	3.4	3.6	3.6	3.6	3.5	3.9
Building trust with stakeholders	3.4	3.3	3.5	3.3	3.5	3.4	3.1	3.5
Getting support from the Board and senior executives	2.8	2.7	3.1	2.7	2.7	2.7	2.5	3.0

Note:

Scale: 1 – Very Easy; 2 – Easy; 3 – Neutral; 4 – Difficult; 5 – Very Difficult

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Table A.8 shows the degree of integration of ERM and strategic planning. For each strategic planning activity, the table lists the percentage of responses indicating that ERM is embedded. Strategic planning is an area in which ERM can add value to achieving business goals, in addition to risk control. ERM plays an important role in capital management and new business planning. ERM has not been embedded in performance measurement in most cases. The integration of ERM and liquidity management/asset allocation also shows room for improvement. Life companies have more integration of ERM and new business planning/liquidity management and less integration of ERM and the other three areas. The degree of integration increases with the size of the company in general, except in the cases of liquidity management, where mid-sized companies have the most integration, and asset allocation, where mid-sized companies have the least integration.

Table A.8

ERM and Strategic Planning

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Capital management	78%	81%	69%	69%	77%	57%	69%	69%
New business planning	55%	63%	38%	56%	46%	29%	54%	62%
Liquidity management	48%	59%	23%	47%	38%	29%	62%	46%
Asset allocation	43%	48%	31%	39%	46%	43%	23%	54%
Performance measurement	25%	26%	23%	22%	38%	0%	23%	31%
None	20%	19%	23%	25%	8%	14%	23%	31%

Note:

None: Respondents indicated that ERM has not been integrated with any of the five areas.

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Table A.9 lists internal stakeholders' opinions on ERM, and what risk officers and external consultants think internal stakeholders' opinions are. Doubts still exist about the value of ERM beyond risk control and meeting regulatory requirements. Internal stakeholders' views on ERM seem to be better than risk professionals think they are. Compared to internal risk officers, external consultants think ERM work is undertaken more to meet regulatory requirements. Life companies share similar views with P&C companies, with only marginal differences. Large companies found explaining ERM concepts and results, and validating ERM models, to be more challenging compared to smaller companies.

Table A.9

Opinions on ERM

	All	Internal Risk Officer*	Internal Stakeholder	External Consultant *	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
ERM is to meet regulatory requirements and set risk controls. It has little, if not negative, value for the company's business.	3.5	3.2	4.0	2.3	3.5	3.5	3.5	3.7	3.9
ERM concepts and results are difficult to understand.	3.0	2.6	3.4	2.6	2.9	2.7	3.4	3.2	2.7
ERM models and analysis are difficult to validate and have doubts about them.	2.7	2.3	3.1	2.1	2.7	2.5	3.1	2.8	2.6
ERM is useful for smart risk selection and helps improve the long-term value of the company.	2.0	2.5	1.6	2.6	2.1	2.2	2.1	1.9	1.9

Note:

Scale: 1 – Strongly Agree; 2 – Agree; 3 – Neutral; 4 – Disagree; 5 – Strongly Disagree

* This is internal risk officers'/external consultants' perceptions of internal stakeholders' opinions, not internal risk officers'/external consultants' own opinions.

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Table A.10 lists the effectiveness of some stakeholder engagement methods. In general, life companies think that the methods are more effective than do P&C companies. Small companies find the methods less effective compared to larger companies, especially on stakeholder analysis, ORSA communication, and embedding risk management goals in performance measurement. Larger companies find relationship building and external stakeholder opinions to be effective.

Table A.10

ERM Stakeholder Engagement Effectiveness

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Relationship building and management	2.0	2.0	2.1	2.0	2.2	2.5	1.9	1.7
External stakeholder opinions (regulators, rating agencies and experts)	2.5	2.5	2.4	2.4	2.4	3.4	2.4	2.2
Effective communication of difficult concepts	2.6	2.7	2.6	2.6	2.7	2.9	2.5	2.7
Stakeholder analysis	2.8	2.8	2.6	2.7	2.8	4.0	2.5	3.1
Embedding risk management goals into performance measurement	2.8	2.7	3.0	2.6	2.9	4.0	2.5	2.4
Communication of industry ORSA (own risk & solvency assessment) expectations	2.9	3.0	2.6	2.8	3.1	4.2	2.9	2.4
Recruiting experts on stakeholder engagement	3.1	2.9	3.6	3.0	3.4	3.5	3.0	2.3

Note:

Scale: 1 – Very Effective; 2 – Effective; 3 – Moderately Effective; 4 – Slightly Effective; 5 – Not Effective

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Table A.11 shows internal stakeholder experience with ERM activities. Areas that can be improved are the linkage between ERM and performance measurement, and more resources to meet risk management requirements. Life companies and P&C companies have very similar experiences with ERM. Small companies have had less-positive experiences with ERM, followed by large companies. Internal stakeholders of mid-sized companies have had the best experience with ERM.

Table A.11

Internal Stakeholder Experience with ERM

	Internal Stakeholder	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
My performance measurement is linked to risk management.	3.5	3.5	3.4	4.5	3.0	3.9
I have enough and appropriate resources to meet new risk management requirements.	2.8	3.2	3.1	3.9	2.6	3.4
My interests and concerns have been fairly reflected in risk management projects.	2.4	2.5	2.4	3.3	2.4	2.4
I received enough information on risk management projects.	2.3	2.4	2.3	2.8	2.5	2.4
I think risk management analysis/tools are helpful for my own work.	2.0	2.0	2.1	2.5	1.9	2.3
I received enough training to understand risk management policies and reports.	2.0	2.0	2.1	2.8	1.9	2.2

Note:

Scale: 1 – Strongly Agree; 2 – Agree; 3 – Neutral; 4 – Disagree; 5 – Strongly Disagree

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Table A.12 lists the effectiveness of different communication approaches. In general, face-to-face discussion is the most effective method of ERM communication, followed by regular reporting. Contrary to the opinion of internal risk officers, external consultants consider regular project meetings as a more effective approach to communication than discussion groups. Compared to P&C companies, life companies find that face-to-face interviewing is more effective and regular project meetings less effective. Compared to larger companies, small companies found all communication methods less effective. Mid-sized companies found discussion groups to be a more effective method compared to small and large companies. Town hall meetings are more frequently used by large companies, but still considered the least effective approach to ERM communication.

Table A.12

Communication Effectiveness

	All	Internal Risk Officer	External Consultant	Life	P&C	Size: <$1B	Size: $1B – $20B	Size: >$20B
Face-to-face interview	2.1	2.1	2.0	2.0	2.7	2.7	2.0	1.9
Regular reporting	2.8	2.9	2.7	2.8	2.8	3.2	2.9	2.7
Workshop	3.1	3.1	3.0	3.2	3.1	3.2	3.5	2.6
Discussion group	3.1	3.0	3.5	3.0	3.4	3.7	2.6	3.0
Regular project meeting	3.3	3.5	2.8	3.5	2.9	4.2	3.4	3.3
Town hall meeting	4.4	4.5	4.2	4.4	4.2	5.0	5.0	3.4

Note:

Scale: 1 – Very Effective; 2 – Effective; 3 – Moderately Effective; 4 – Slightly Effective; 5 – Not Effective

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