Leveraging technology and data for cost effective risk management
Introduction 1
Technology can be an enabler 2
Technology opportunities 3
  Data warehouse solutions 3
  Governance, Risk and Compliance (GRC) tools 3
  Modeling tools 4
  Reporting tools 5
  Document and disclosure management tools 4
  Workflow tools/processes 5
Data management and data quality: critical components of effectiveness 6
  Data governance 6
  Data quality and granularity 7
  Data analytics 7
Practical steps for bringing risk management technology and data visions to life 8
Conclusion 9
A broad data and technology vision and strategy should support more cost-effective, forward-looking and result-oriented risk management systems.

One of the many challenges facing chief risk officers (CROs) is how to help their organizations produce and use high-quality risk information in a fast, reliable and insightful way.

Technology and data are enablers for effective and efficient risk management, supplying tools and raw material that facilitate risk management processes and decision-making. There is an opportunity for insurance companies in the current business environment – where new regulations such as Solvency II are impacting technology and data – to make certain that changes help create a more sustainable and value-added technology and data strategy.

Data is the raw material that machines (information and communications technology (ICT) systems) use to create useful information. Technology and data differ and both unlock value in different ways. Therefore, CROs must consider how improvements in each can help an insurer manage risk cost-effectively.

Cost-effective risk management

- Improved data
- Improved technology

More cost-effective risk management
Leveraging technology and data for cost effective risk management

Technology can enable improved insight, efficiency and effectiveness in risk management activities, including internal and external reporting. Greater automation of reporting can free up time for risk management resources to spend on risk identification, assessment and control of future risks. Different types of tools can be used to achieve this.

These tools can be used by large, complex organizations or by smaller ones, although, in order to work efficiently, the “proportionality” principle needs to be applied. Some smaller insurers may not always need sophisticated and relatively expensive modeling tools to create the information necessary for cost-effective risk management decision-making.

There are a number of technology challenges to overcome. For example, it can be difficult to focus and prioritize risk-related information technology (IT) improvements because they stretch across so many different parts of the business. Activity can easily become uncoordinated and lack cohesion.

The most important thing for CROs, and others with responsibility for risk management, is to have a clear view of what is necessary for management and regulatory purposes and then build a technology strategy to support it.
Technology opportunities

There are a number of areas where technology advancements can typically be made by both large and small insurers. Some of these are considered below:

Enabling technology and data

- Data warehousing solutions
- Modeling tools
- Reporting tools
- Document and disclosure management tools
- Workflow tools
- Governance, Risk and Compliance tools

Data warehouse solutions

Access to consistent and comprehensive data is fundamental to effective risk identification, assessment, control and monitoring. A well-defined and implemented data warehouse can form the basis of a responsive architecture, in which data is made available to different business users in an efficient way.

Such a data warehouse, which is easily accessible and is used to store and retrieve required data, should greatly increase the speed with which analyses can be made to support decision-making. Additionally, the overall quality and depth of the data and corresponding information can be increased with an improved ability to analyze data; understand drivers of change; and identify trends, aggregates and patterns.

However, data warehouses can be expensive to build, so cost-effective risk management will consider the cost-benefit of improved risk information enabled by data warehouse solutions – and that requires collaboration between IT and risk professionals.

Governance, risk and compliance (GRC) tools

GRC tools are typically an area of frustration for many companies. Although the risk and control information they contain should be useful in terms of understanding risk and prioritizing activity, the tools themselves are not always well understood by business users. As a result, the input quality and, therefore, the usefulness of the data, can be less than optimal.

Additionally, certain risks (e.g., those relating to financial reporting controls) frequently may be held in different systems or in other disconnected ways from other risk information. This means that attempts to reconcile data manually can be very inefficient and time-consuming.

Increasingly, tools are being created and implemented with improved user-friendliness, meaning they are better understood and used by line management. The best GRC tools also provide more insightful and consistent reports from the combined data.
Every company is different, but based on the size, complexity, organization and governance models, the CRO should be involved in shaping a clear technology strategy for risk management.

Modeling tools
Existing tools can sometimes be a drain on resources without actually contributing much to effective risk management.

Modeling tools should be cost-effective enablers of risk management activity, and thus aligned to the basic intention of forward-looking risk assessment (e.g., as required in Own Risk Solvency Assessment or ORSA). However, often they can be too complex and difficult to revise when different scenarios need to be considered.

Insurers are increasingly demanding faster access to the right level of information to use when assessing and analyzing “what if” scenarios. Full models can take too long to update and sometimes lack the flexibility to support the scenario analysis necessary for effective risk management on a day-to-day basis, so other ways need to be found. Spreadsheet simplification is often a great way to reduce cost, along with, for example, simplified capital projections using proxies.

Companies need to understand their own optimum level of modeling for priority business decisions so that risk-based capital implications can be understood quickly and reliably.

Reporting tools
Insurance companies are well aware of the regulatory and commercial need to make the right information available to the right people at the right time. However, achieving cost-effective reporting can be challenging. Changes cost time and money and sometimes the new information produced is not used in decision-making.

Designing improved use of reporting tools requires navigating existing risk information silos, paper-based reporting and manual assimilation. It is important, therefore, to make certain that reporting tools are aligned to production and use of information, which is (or should be) of greatest use to the business in terms of managing risk to achieve the business strategy. In some cases, this could involve significant change from existing areas of focus.

Risk reporting (and modeling) tools should not be considered in isolation from other business reporting activity. For example, International Financial Reporting Standards and other reporting requirements can be leveraged. As a result, a single reporting tool that works in a fast-modeling and multiple-reporting environment could be an option for providing risk information quickly and consistently across business entities.

Document and disclosure management tools
Keeping information up to date is difficult, especially when it is copied and reused across departments. Document and disclosure management tools can help in providing that information is kept up to date effectively and, at the same time, make certain that documentation is retrieved from other sources efficiently and consistently through reuse. Not all elements of a report can be automated, of course, but many can.

Effective document and disclosure management tools can also provide that information is not copied and duplicated (e.g., when elements of other reports are reused for ORSA purposes) and that it is maintained in a controlled manner with an “audit trail.”
Technological changes provide CROs with an opportunity to create value by making risk management activity more effective and efficient.

Workflow tools and processes

Given the need for cohesion between departments, cross-department workflows (and workflow tools) can be implemented to support risk reporting. Moreover, cross-department workflows can be developed to actually manage risks (and not just for the reporting workflows). The increase in cohesion of the suite of organization-wide risk management processes will positively impact the effectiveness of ORSA or similar risk assessment initiatives.

With respect to workflows, technology enables the company to work efficiently. ICT tools can be used to manage the workflow (e.g., in an ORSA or a similar risk assessment exercise) and make certain that all people across departments perform the tasks they are assigned. This enables the company to work together more efficiently and provides that information can be shared and is consistent.
Leveraging technology and data for cost effective risk management

Data is the “raw material” that is used both in manual and technology-enabled processes. It is the basis of the information provided to risk managers and key to enabling the right decisions.

Data is the cornerstone of the models that support risk management decision-making (e.g., the forward-looking outcomes in the context of a risk assessment, such as the ORSA). Furthermore, it is the basis for assessing the impacts of certain events and calculating the results of various scenarios. This raw material needs to be assessed and controlled continuously in order for its maximum value to be released.

Assessing and controlling data require an effective definition of data, granularity and quality. Clear data governance is also needed, through which ownership and responsibility are organized and delegated in the organization.

Cost-effective improvement opportunities for data can be divided into at least three distinct domains:

**Interlinked data improvement opportunities**

- **Data governance**
- **Data definition: quality and granularity**
- **Data analytics**

**Data governance**

Data governance is fundamental in making certain that data is controlled appropriately. It sets forth the structure of the decision-making, processes and IT required to create consistent and proper handling of data across the business. It embodies a convergence of data quality, data management, data policies, business process management and risk management surrounding the handling of data in an organization.

Policy and governance need to be defined, documented and applied effectively for the proper and efficient handling of data.

Data quality responsibilities need to cover both the functional and technical aspects of data quality, often assigned to different parts of the organization. Every person assigned a role in the data governance framework needs to make certain that data is delivered according to the defined requirements. This applies to all people in the organization, ranging from policy administration managers to actuaries. This is the way to embed the governance system so that data is continuously monitored, assessed and corrected “at the source.”
Data quality and granularity

For risk management reporting to have value, the use of certain pieces of information and their accuracy need to be defined, understood and addressed. Based on a clear definition, the quality of risk data can be assessed and reported as performance indicators.

Data requirements will not always be the same for different pieces of information and the main consideration should be on how the data and information are used. Effective and efficient risk management requires a clear view on what data is required, the level of granularity, the definition and tolerances allowed. In the case of quick decisions and scenario building, the acceptable level of granularity can sometimes be lower.

Whatever the accepted level of data granularity, data quality needs to be good, which means “as defined.” Organizations are already improving the quality of their data in response to regulation and data quality standards. Improved approaches to data flows and data liability are helping insurers build “golden sources” of data in their organizations.

CROs concerned about risk management data quality and reliability can therefore leverage these broader data improvement initiatives. This will help minimize the risk of decision-makers going to the “wrong place” for risk management data. Leveraging golden-source-related data improvements should provide an efficient way to inform risk management decisions.

Data analytics

Data analytics present opportunities for insurers to identify niches and profitable products. However, the risks are significant if competitors use data analytics successfully and find profitable niches or client segments first. Companies that are slow to embrace data analytics run an increased risk of positive or negative selection as competitors sharpen their marketing toward priority segments.

Businesses that successfully embrace data analytics will reduce this risk as the “real” drivers of risk can be better identified, priced and managed accordingly.

Regardless of the competitor environment, niche offerings based on improved data analytics should increase confidence in risk exposures, which should also increase capital efficiency because it will be easier to demonstrate how capital matches the risk levels.
Practical steps to bring risk management technology and data visions to life

Bringing cohesion to risk information activity can be an important area of contribution for a CRO. There are few individuals with the organizational interest or responsibility to reach across so many different areas of specialization for a common goal.

The risk information framework illustrated in the chart below can be used for some or all of the risk information that CROs wish to influence and provides a way to get appropriate involvement of different specialists at each stage. Specialists typically already have approaches and tool kits developed for their area of expertise but, increasingly, CROs are pursuing better connectivity and the chart illustrates the linkages.

Additionally, the prioritization of technology and data improvement activity can be supported through better understanding of the linkages that are highlighted by this framework.

- Identification of key risk information
  - Determining priority information to be made available for strategic or tactical business reasons and/or regulatory reasons
  - Key: Set up a method for determining what is a priority

- Effective use for better decisions
  - Using priority information in prompting and making decisions
  - Key: Providing information that is properly understood and used

- Effective and efficient production
  - Designing and adjusting the architecture necessary to produce priority information at the right time
  - Key: Maintaining primary focus on the important information only

- Insightful reporting
  - Actively considering how the information is presented to users
  - Key: Dynamic highlighting of key issues as well as more static reporting of information using templates

- Validation and confidence
  - Ensuring that the information produced is reliable
  - Key: Effective model risk management and IT data governance and control
Conclusion

Technology and data are becoming increasingly important for efficient and effective risk management in the insurance industry.

CROs have the opportunity to play a significant role by influencing risk management technology and the data and technology strategy so that prioritization of improvement activities can be cohesive, consistent and reliable – focused on the identification, production and use of the most important information.

Authors

Roy Boukens
+ 32 2 774 91 11
roy.alexander.boukens@be.ey.com

Clive Martin
+ 44 20 7951 1850
cmartin1@uk.ey.com

Andy Challoner
+ 44 20 7951 8532
achalloner@uk.ey.com

Jennifer van Eekelen
+ 31 88 40 71794
jennifer.van.eekelen@nl.ey.com

Contacts

<table>
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<tr>
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<tr>
<td>Martin Bradley</td>
<td>Bill Spinard</td>
<td>Matt Hodson</td>
<td>Martin Bradley</td>
<td>Gautam Kakar</td>
</tr>
<tr>
<td>+44 (0) 20 7951 8815 <a href="mailto:mbradley@uk.ey.com">mbradley@uk.ey.com</a></td>
<td>+ 1 703 747 1070 <a href="mailto:bill.spinard@ey.com">bill.spinard@ey.com</a></td>
<td>+ 61 2 9248 4681 <a href="mailto:matt.hodson@au.ey.com">matt.hodson@au.ey.com</a></td>
<td>+ 44 20 7951 8815 <a href="mailto:mbradley@uk.ey.com">mbradley@uk.ey.com</a></td>
<td>+ 91 22 6192 0000 <a href="mailto:gautam.kakar@in.ey.com">gautam.kakar@in.ey.com</a></td>
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<tbody>
<tr>
<td>Yuji Ozawa</td>
<td>James Littlewood</td>
<td>Ranjit Jaswal</td>
<td>Russel Lok</td>
<td>Richard Hart</td>
</tr>
<tr>
<td>+ 81 (0) 3 3503 1088 <a href="mailto:ozawa-yja@shinshin.or.jp">ozawa-yja@shinshin.or.jp</a></td>
<td>+ 1 305 415 1849 <a href="mailto:james.littlewood@ey.com">james.littlewood@ey.com</a></td>
<td>+ 852 2846 9888 <a href="mailto:ranjit.jaswal@hk.ey.com">ranjit.jaswal@hk.ey.com</a></td>
<td>+ 65 6309 8100 <a href="mailto:russel.lok@sg.ey.com">russel.lok@sg.ey.com</a></td>
<td>+ 44 788 173 687 <a href="mailto:rhart@uk.ey.com">rhart@uk.ey.com</a></td>
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