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# Navigating Uncertainty

A practitioner's toolkit  
to managing emerging risks

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# Foreword

## Purpose of this paper

The CRO Forum’s core aims include identifying and benchmarking good practice in risk management and sharing its ideas with the wider insurance industry through its publications. Additionally, it provides insights on emerging and long-term risks through the CRO Forum’s Emerging Risk Initiative (ERI) which it has run for 20 years. Covering the different steps of the risk management cycle (risk strategy and governance, identification, evaluation, mitigation, monitoring and reporting), this paper showcases examples of how the CRO Forum member firms approach the management of emerging risks.

To prepare this paper, member firms’ CROs and emerging risk experts were surveyed, and the insights gained are reflected in this paper.

**NOTE:** This paper should **not** be treated as ‘best’ practice, but rather as examples of good practice. Practices can and should vary between insurers depending on their size, complexity, lines of business (Life versus Property & Casualty; Direct versus Reinsurance) and operating model (centralised versus devolved).

## Why managing emerging risks is so critical for insurers

Emerging Risks consist of new or developing risks as well as existing risks that are difficult to quantify in terms of frequency and severity of potential losses (see also the extended definition given in section 1.1). Emerging risks are extremely relevant for the insurance industry due to their accumulation potential, long-term exposure, potential to hit across several lines of business, and the initial difficulties experienced with respect to establishing a clear causal link between risks and outcomes.

An understanding of the emerging risks a company faces is one of the fundamental tools for the CRO, whose role is to help guard the company from future threats and provide a forward-looking view of the emerging risk landscape to support key decision-makers.

The inter-connectivity of many emerging risks makes them even more challenging to model; their analysis therefore relies heavily on expert judgement. Their consequences often have impacts on an insurers’ balance sheet, franchise, reputation, operations and strategy, transversally across the whole business, creating organisational challenges in how to most effectively manage these impacts. For example, most insurers correctly identified pandemics as a major emerging risk, but few of these predicted the Covid-19 scenario of nationwide blanket closures of workplaces and schools. Human and political actions and reactions are often the hardest to predict.

Emerging risks do not just pose threats to insurers, but also opportunities if recognised and acted upon quickly enough. Indeed, there are numerous examples of business failures where dominant incumbents have failed to take advantage of the opportunities from new emerging technologies, such as Kodak and digital photography or Blockbuster and streaming services. Focus can often be on downside risks, while overlooking the opportunities (e.g. insurers have long focused on obesity as an emerging risk but may have overlooked the opportunities provided by recent advances in obesity medical treatments).



# Executive Summary

Each section of this paper, as explained below, explores a different step of the risk management cycle (risk strategy and governance, identification, evaluation, mitigation, monitoring and reporting), reflects on common challenges and shares insights of how individual CRO Forum member firms have addressed these in their risk management processes.

## Section 1

The framework for emerging risk processes is very individual to each CRO Forum member firm, reflecting their different organisational designs and operating models. Section 1 explores the key elements of any strategy related to emerging risks: the concept and definition of emerging risks and trends, their pivotal strategic importance for insurers and the related risk appetite, as well as the type of governance and level of formalisation, such as policies, typically established to effectively navigate the uncertainties and challenges related to emerging risks.

## Section 2

More than other risk processes, the high degree of expert judgement involved in emerging risk identification and evaluation creates the risk of human bias, which might for example lead to blind spots. Section 2 explores the risk of human bias and how this can be mitigated. It also explores the identification of key risk indicators for emerging risks which can act as early warning indicators and triggers for action. The complexity of the emerging risk landscape makes the prioritisation of the most critical emerging risks key. This section explores how this can be achieved.

## Section 3

By their nature emerging risks are likely to have enterprise-wide impacts across multiple risk types. Section 3 explores different approaches adopted by insurers to evaluate emerging risks and who should be involved. Many emerging risks are also characterised by their inter-connectivity, so this section also explores approaches adopted by insurers to identify and visualise these and engage management and underwriters.

## Section 4

The management of emerging risks benefits from a comprehensive approach that integrates both mitigation and opportunity exploration within the company’s strategic framework, supported by a clear articulation of the company’s risk appetite and a governance structure that supports risk-aware decision-making at all levels. Section 4 explores examples of management action and triggers for action, ensuring strategic alignment of actions and seizing the opportunities that emerging risks can sometimes provide.

## Section 5

Section 5 explores how emerging risks can be tracked and monitored and their reporting to senior management, including dimensions and scales, frequencies and the right point of time for reporting. Our survey of CRO Forum member firms reveals that while current emerging risk monitoring and reporting processes are highly manual, there are significant opportunities for automation, in particular through the use of artificial intelligence (AI).

The reader will observe divergence in practice between CRO Forum member firms and commonality between approaches to the management of current and emerging risks. This partly reflects differences between firms in where they draw the line between what is a current and emerging risk. For example, cyber security and climate change are present day risks that insurers are actively managing and mitigating but are subject to considerable uncertainty as to how they might evolve in the future and therefore insurers continue to also manage these as emerging risks.

## Looking to the future

Looking to the future, Artificial Intelligence (AI) enabled tools may provide opportunities for insurers to introduce a greater level of automation to better identify risks and also in producing reports. Manually identifying risks relies on human judgement and is time consuming, so looking at data focused tools could introduce more objectivity into the process as well as making it easier and quicker to update. For example, Large Language Models (LLMs) can process organisations’ own data, such as committee papers, as well as external sources to identify relevant emerging risks, and once set up, such a model could be refreshed to give frequent updates, with human input being more efficiently focused on review.

However, despite the latest developments in data tooling, machine learning and artificial intelligence, these seem unlikely to ever replace the need for significant expert judgement in how insurers identify and monitor emerging risks.

As set out later in this paper, scenario analysis, testing and planning have long been part of the emerging risk management toolkit. The capability to capture interconnectivities between complex systems, or ‘system of systems’, is critical to scenario analysis<sup>1</sup>. Increasingly, insurers have been exploring *Systems Thinking* approaches to scenario analysis to address the complex interconnections and causal relationships, rather than one based on a snapshot and independent aspects specific to the emerging risk. Historically, computing power has been a limiting factor in evolving a *Systems Thinking* approach to emerging risk scenarios beyond the qualitative to fully developed quantitative analysis. Increasing computer power is likely to make such an approach to emerging risk scenario analysis possible and part of the insurers emerging risk management toolkit, notwithstanding any inherent model and data limitations.

## In conclusion

Climate change, technological developments, demographic changes and the changing geopolitical dynamics between developed and developing nations mean that the future risk landscape has not been so uncertain for a long time, and therefore effective emerging risk oversight and management will remain a priority for insurers for the foreseeable future and critical to strategic planning and ensuring business resilience.




<sup>1</sup> University of Cambridge Centre for Risk Studies ([crs-developing-scenarios-for-the-insurance-industry.pdf](#) page 16)

# 1. Risk Strategy and Framework

This section explores the key elements of any strategy related to emerging risks and the diverse frameworks for their management in use across different organisations. It also considers how emerging risks can be integrated into strategic planning and other business processes.

## 1.1 The concept of emerging risks and trends

Almost all CRO Forum member firms surveyed have their own bespoke definition of emerging risks. This likely reflects both the scope, breadth and depth of what each company intends to capture and the historical roots of companies’ emerging risks processes and how they relate to other established risk processes.

**Example Emerging Risk Definition (CRO Forum’s Emerging Risk Radar)** 

Emerging Risks are risks which may newly develop, or which already exist and are continuously evolving. They are characterised by a high degree of uncertainty in terms of impacts and likelihood and may have a substantial potential impact on underwriting, investments, and/or operations of an insurance company<sup>2</sup>.

In addition to the concept of emerging risks, some companies – and indeed the CRO Forum as well in its Major Trends and Emerging Risk Radar<sup>2</sup> – also use the concept of trends. It is helpful to see trends as more general and less concrete, as overarching

and linking into many single individual emerging risks. Trends typically are the drivers behind risks, and monitoring trends helps to proactively identify potential new risks. Trends can span several categories (e.g. economic / environmental / technological), and whilst single emerging risks can be assessed via scenarios, trends are typically too complex to model.

The distinction between the terms mega-trends, major trends and trends is an individual company’s judgment for which there seems to be no consensus on best practice. Indeed, while the CRO Forum created its first emerging risks radar as far back as 2006, the concept of trends was only included in 2018. They are called “major trends” and were accompanied in the first year of introducing them by “lower-level trends”. For example, the major trend “Ageing and Health” was associated with the three sub-trends “Medical Advances”, “Ageing and Chronic Diseases”, and “Ageing Western Societies”. This concept was abandoned in the following year, and some of the lower-level trends have since become risks in their own right, such as medical advances. However, the term “major trends” remains.

In the survey of CRO Forum member firms, it is notable that currently roughly half of the respondents differentiate and use the two concepts of ‘trends’ and ‘risks’, while the remainder just employ the term ‘risks’. This may be an example of firms selecting a framework and taxonomy appropriate for the size and complexity of their business.

**Table 1:** Examples of Major Trends (CRO Forum’s Emerging Risk Initiative<sup>2</sup>)

Major trends	Examples of associated emerging risks
<b>Ageing and Health Concerns</b>	Antimicrobial resistance, emerging infectious diseases
<b>Economic Instability</b>	Global debt crisis, supply chain complexity
<b>Environment and Climate</b>	Climate change transition risks, environmental pollution
<b>Sustainability</b>	Climate engineering and storage techniques, Supply Chain Complexity
<b>Shifting Geopolitical Landscape</b>	Evolving terrorism, cyber risks
<b>Technological Development</b>	Artificial intelligence, data privacy and data ethics
<b>Demographic and Social Change</b>	Climate change physical risks, Nature and Biodiversity Loss

<sup>2</sup> <https://thecroforum.org/emerging-risks-initiative-major-trends-and-emerging-risk-radar-2024/>

### 1.2 The strategic importance of emerging risks

Emerging risks are fundamentally different from known, modelled and priced for risks and thus require special attention as well as a unique approach in identification, analysis, assessment, monitoring and mitigation. Traditional risks are better understood with respect to their potential impact and probability of occurrence and typically have established modelling techniques and availability of historical data. In contrast, emerging risks are characterised by a high level of uncertainty, the potential for rapid changes, and lack of data, usually arising from external developments, including changes to regulation and jurisprudence, and are often driven by external developments. The forward-looking aspect closely links emerging risk and strategic perspectives.

This means that the understanding and management of emerging risks is a key component of any insurance company’s risk and business strategy. For this reason, emerging risks management is much more than a compliance exercise carried out to satisfy regulatory or other external expectations, but is a key differentiator to enable a company’s long-term survival and success. Strategic scenario analysis can be based on trends and emerging risks identified to be relevant for the company.

Member firms of the CRO Forum show a recognition of the strategic role of emerging risks when it comes to risk anticipation and awareness. This includes avoiding future losses, understanding the evolution of the risk landscape and new threats, as well as being positioned to exploit emerging opportunities. Two thirds of CRO Forum member firms surveyed responded that they include potential opportunities in their emerging risks framework. This is in the spirit of the use of the term risk in enterprise risk management (ERM) as two-sided, with risks consisting of hazards and opportunities. However, many companies report that there is still potential to improve implementation of the opportunity aspect of emerging risks in practice.

One prominent use for companies’ emerging risks processes is their Own Risk and Solvency Assessment (ORSA) and scenario testing. As mentioned in the [CRO Forum’s Best Practices on ORSA Stress and Scenario Testing](#)<sup>3</sup>, ORSA and scenario testing can be used to investigate new and emerging risks and to help the company

assess whether and how the capital model and the financials in general will capture a new or emerging risk and understand the impacts of that risk. Other purposes include the setting and review of risk appetites and underwriting guidance.

To ensure that senior management and Boards devote sufficient time to emerging risks, CROs use verbal and written updates (between quarterly and yearly in frequency) and often have dedicated agenda items for emerging risks at Board meetings.

### 1.3 Integration in strategic planning

A key area of future focus of CRO member firms in emerging risk management lies in its integration with strategic planning.

As complexity increases and change accelerates, it is increasingly important to embed a forward-looking and systemic approach to emerging risks within strategic planning. This approach helps evolve products, services and business models, ensuring continued value creation for all stakeholders over time.

Emerging risk frameworks focused on anticipating macro trends, such as the one described in the following section, can play a critical role in this integration. These frameworks can help in several ways:

- **Defining the baseline scenario:** By identifying the most relevant macro trends for the plan’s time horizon, along with their associated risks and opportunities, these frameworks help senior leadership and strategic planning teams lay the groundwork for the company’s strategic plan. They support defining the company’s key strategic pillars and actions needed to mitigate emerging risks and seize new opportunities.
- **Assessing the resilience of strategy to alternative possible futures:** based on the macro trends driving the priority emerging risks and opportunities, these frameworks enable the exploration of how the future can evolve differently from the baseline scenario and define a range of alternative future scenarios - both adverse and preferable. This helps strategic planners assess the “future-proof” quality of the company’s strategy in an evolving environment, determining how well it is positioned to withstand uncertainty.

<sup>3</sup> See [CRO-ORSA-stress-and-scenario-testing.pdf](#)

### 1.4 The framework for an emerging risks process

Among the CRO Forum member firms surveyed, own maturity of the emerging risk process was generally self-assessed as middle to high, while no firms rated themselves as perfect. There is no straightforward way to assess the level of maturity of a company’s emerging risks process, as there are no de-facto maturity standards. As is the case for all processes, there are generally areas with opportunities to further develop and improve. Some typical key criteria for good practice in establishing a solid framework for emerging risks management within a company include:

- Board and executive ownership
- Clear governance and framework, e.g. policies or guidelines
- Regularly scheduled risk assessments and reviews by cross-functional teams
- Pro-active risk identification
- Inclusion of trends and interconnections
- Alignment with strategy and business planning
- Back testing/postmortem/learning from failures
- Broad stakeholder engagement
- External partnerships, e.g. with academia
- Suitable tools and data
- Addressee-tailored reporting

It should be emphasised that these are examples, and some of the criteria given might be regarded as less important than others from another company’s viewpoint, who might find certain criteria lacking in this list that they found to be relevant in their own approach. Also, some of the components used can be idiosyncratic and reflect the individual history of the approach taken by a company.

At the centre of a typical emerging risk framework is the gathering relevant intelligence on emerging risks and its integration with other parts of the company’s business processes. Figure 1 illustrates some key elements of these connections.

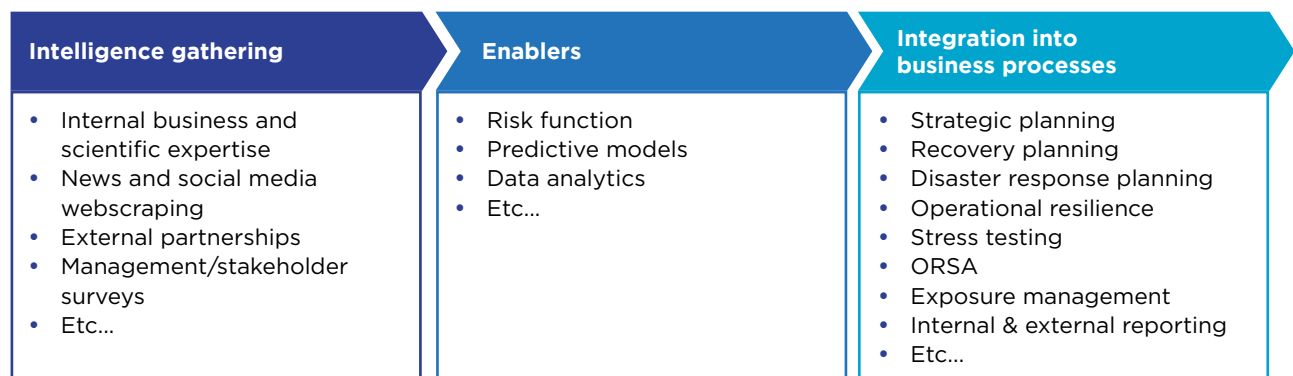
### 1.5 The governance and organisation around emerging risks

As expected, the outcome of the survey of the CRO Forum member firms showed that the topic of emerging risks is mainly sponsored by the CRO/ Risk management function. Parties involved in the governance and the process generally include risk management, underwriting and business functions, but with heterogenous approaches across surveyed companies. A special relationship exists with the CFO and Finance and Capital teams with respect to their contribution to strategic planning. The importance of cooperating with the sustainability function is increasingly noted.

There is not always dedicated, formal, and regular governance specific to emerging risk. Around half of CRO Forum member firms surveyed have a dedicated emerging risk committee / forum, and two thirds of these have set terms of reference. This can be linked to the cross-functional nature of emerging risks and the fact that they are typically not covered by financial reporting requirements.

Regarding the structure of the emerging risks process, dedicated teams are not common, as emerging risks are mainly covered by transversal teams (Enterprise Risk Management (ERM) in particular, due to its link with the ORSA process) or specific working groups. Many companies are involving all employees across business functions in some way, which fits well with the contribution that the emerging risks process makes to overall risk culture objectives.

**Figure 1:** Integrating intelligence into business processes





## 2. Emerging Risk Identification

This section discusses the contiguous steps for emerging risk identification (incl. KRIs) with a special focus on bias mitigation. It points out human and non-human sources for emerging risk identification. This is followed by strategies to prioritise key emerging risks.

### 2.1 Who to involve

The identification process involves the proactive investigation of various sources and experts. To reduce the risk of human bias, which might for example lead to blind spots, it is recommended to ensure the sources stem from different backgrounds and cover a broad field to gather as complete a set of information as possible.

Internally engaging the Board, with support from risk experts, actuaries, legal, IT, and HR teams, helps anticipate future developments and ensures alignment with strategic planning. Employees provide diverse perspectives on risks, whilst newly employed personnel and interns can contribute fresh and innovative ideas.

#### a. Internal Expertise

Typically, internal subject matter experts can quickly identify emerging risk signals from within the business, but they may often lack the seniority or authority to be heard, for example due to being too granular in the description of these risks or lacking a cross company view. Meanwhile, divisional directors are skilled at detecting and assessing risks within their specific areas, but their specialised focus means they might not see the broader risk landscape across the entire company. They might also give lower priority to risks that are not immediately expected to occur (i.e. short-term bias) and miss emerging risk indicators happening at the operational level. In contrast, while they may not have the day-to-day frontline exposure to business risks, internal enterprise risk executives, responsible for oversight of the company’s risk profile, have extensive enterprise wide experience and are adept at identifying connections between risks and a company’s strategic objectives. Taken as a whole all bring differing and valuable insights.

Brainstorming and scenario planning workshops that include employees typically not involved in risk management can help reduce human bias and offer fresh perspectives on potential risks. These sessions can also reveal previously undetected risks that could affect the organisation. Additionally, such exercises enhance risk awareness among staff and encourage more proactive communication about potential risk events.

#### b. External Expertise

Externally, academic experts offer research and theoretical perspectives on emerging risks, grounding the company’s strategies in scholarly analysis. The latest news on business threats or mitigating resilience actions might be found in a broad range of credible news media. Reinsurers provide insights from the reinsurance industry and from the different business lines they underwrite, sharing their expertise in managing complex and large-scale risks. A comparison of a company’s emerging risks catalogue with those of industry peers (to the extent externally published) helps ensure completeness. Corporate clients contribute risk insights from their respective industries, highlighting sector-specific challenges and trends. Think tanks, such as Bruegel<sup>4</sup>, CLTR<sup>5</sup>, and WEF<sup>6</sup>, conduct research on emerging risks, offering valuable data and analysis. Customers reveal trends in consumer behavior, including demand and demographics, which are crucial for market forecasting. Web analytics provide an analysis of web meta trends, identifying shifts in online behavior and emerging digital risks. Consultants provide an external viewpoint that can reveal blind spots.

#### c. Thinking “outside the box”

Finally, it is worth thinking “outside the box” and considering unconventional sources. For example, sci-fi literature (see box on the next page) can inspire innovative thinking about future risks and opportunities, encouraging the exploration of unconventional scenarios.

<sup>4</sup> Bruegel is a Brussels-based independent think tank focused on policy research on economic issues (see [Bruegel](#)).

<sup>5</sup> Centre for Long-Term Resilience (CLTR) is a London-based independent think tank with a focus on global resilience to extreme risks (see [Centre for Long-Term Resilience \(longtermresilience.org\)](#)).

<sup>6</sup> The World Economic Forum (WEF) through its 10 centres focused on global challenges and its annual Risk Report (see [The World Economic Forum](#)).

### Thinking outside the box:

#### Sci-fi literature as a source for emerging risks



#### Examples

- In Robert Heinlein’s 1966 novel “The Moon Is a Harsh Mistress”, the story explores the risks of cyberattacks and deepfakes. A powerful computer is subverted to attack its owners, and computer-generated audio and video fakes are used for political manipulation. This early portrayal of digital threats highlights the potential dangers of advanced technology.
- Oles Berdnik and Yuri Bedzik’s 1957 work “The Man Without Heart” introduces the concept of an artificial human heart. This pioneering idea anticipated the development of advanced medical technologies that could replace vital organs, raising ethical and practical questions about the future of human health and longevity.
- The German “Future Life” project, developed by the Phantastische Bibliothek Wetzlar, systematically extracts and evaluates ideas from science fiction literature, leveraging extrapolations from current data to explore plausible future developments and their potential implications, making it a valuable tool for emerging risk assessment. One of their publications, also available in English, covers various nanotechnology use cases and scenarios.



## 2.2 Mitigating human bias in emerging risk identification

The concept of human biases is not new and has been extensively researched in the past few decades. There are numerous biases described in scientific literature. Examples of the biases are:

- **Overconfidence** – a bias in which subjective confidence in judgements is greater than their objective accuracy. Regardless of how much one knows, one overestimates one’s capabilities.
- **Availability** – a bias in which people assess the frequency of a class or the probability of an event by the ease with which instances or occurrences can be recalled.
- **Anchoring** – a bias in which an estimate is heavily influenced by the initial value.
- **Group think** – a tendency of people to conform to the opinion of the majority.
- **Halo effect** – a tendency of people to give more weight to judgements expressed by somebody who is perceived to have higher authority (e.g. a Board member) regardless of the person’s expertise in the field.
- **Loss Aversion**<sup>7</sup> - People tend to prioritise avoiding losses over achieving equivalent gains, meaning the pain of losing something feels stronger than the pleasure of gaining something of equal value.
- **Framing Effect** - People’s decisions are influenced by how information is presented. They are more likely to choose an option framed positively rather than one framed negatively.
- **Confirmation Bias** - Individuals tend to focus on information that supports their existing beliefs, giving it more weight, while disregarding or downplaying evidence that contradicts their views.
- **Affect Heuristic** - People often make decisions based on their emotional responses, rather than relying on logical reasoning, allowing feelings to guide their judgments.
- **Status Quo Bias** - People have a strong preference for maintaining their current situation, even when a change might lead to a better outcome, favouring stability over the uncertainty of improvement.

<sup>7</sup> See “Thinking, Fast and Slow” by Daniel Kahneman and Amos Tversky

In choosing an approach to identify and evaluate emerging risks, risk managers can mitigate potential effects of human bias by incorporating the right mechanisms and a well-diversified set of experts in the process. Examples of such approaches include:

- gathering information in an anonymous way allowing people to freely express their judgements without being affected by the opinions of others;
- involving a diverse group of experts with different backgrounds, disciplines, functions and hierarchical levels to avoid groupthink and reinforcement of each other’s views; and
- paying attention to how balanced groups are, including by personality type.

### Mitigating human bias by using predictive models of macro trends



Another way to mitigate human bias in emerging risk identification is to involve humans only at a later stage, using macro trends identified and analysed by models as drivers to the discussions on potential risks and opportunities. Existing approaches that allow one to do this<sup>8</sup> start by scanning the external environment to anticipate macro trends for social, technological, environmental and political dimensions. These macro trends are then assessed to distinguish between superficial / transitory topics and stronger and more persistent undercurrents. This helps to ensure that the effort to identify emerging risks (and opportunities) is focused on those trends that are most relevant and transformative in the foreseeable future, reducing the risk of blind spots and ensuring a forward-looking approach.

Humans can then elaborate on the possible risks (and opportunities) that derive from the intersection between the specificities of their businesses or expertise and the interconnections between major trends and the way in which the cascading effects of these trends can generate risks. However, one needs to be aware of potential biases within the models as well. For example, the data that is used to calibrate the models, might not be representative of the scope the models aim to cover.

Emerging Risks are, by definition, difficult to quantify in terms of frequency and severity of potential losses. Therefore, methods that are employed for risk identification and measurement tend to rely heavily on expert opinions which can be prone to human biases. Cognitive biases are a well-documented feature of human thinking and decision-making. In performing their analysis, experts rely on their knowledge and experience thus inherently taking mental shortcuts to arrive at a judgement. Such shortcuts are a necessary feature of everyday decision making. However, a disadvantage of such an approach may be to underestimate the novel impacts of an emerging risk by relating it to a more established or better understood risk and assuming similar behaviours would apply.

Neutralising human biases on an individual level is difficult. As one is not fully aware of the thinking process, it is nearly impossible to catch oneself when making intuitive errors. On the other hand, neutralising biases at the organisational level can be achieved because most of the decisions are influenced by many people. One may not be good at catching one’s own cognitive distortions, but one can apply rational thought to detect biases in others’ decision making. In order to do so, one must not only focus on the content of decisions but also on the process of decision making.

### 2.3 Prioritising emerging risks

To bring senior management’s focus on the management of emerging risks it is key to prioritise the large number of potential emerging risks to a company-specific, manageable set, based on their relevance to business operations, in alignment with the business plan period (or strategic horizon) and the organisation’s ability to respond to the risk.

Other approaches include fixing a set number of emerging risks for reporting purposes and peer comparison and assessing and filtering out risks based on ranking risks by impact and other dimensions (see section 3.3).

This process involves funnelling through discussion and regular working group reviews, with further refinement occurring as part of the emerging risk evaluation process (see section 3 and, in particular 3.2 Analysis of Relevance). An integrated trend analysis can also be used to identify and prioritise the most pertinent risks.

<sup>8</sup> For example, the meeting point approach developed by the University of Bologna allows to anticipate future trends through the analysis of communication flows coming from the different social systems that represent drivers of change for the insurance sector.

## 2.4 Identifying (and using) Key Risk Indicators (KRIs)

The characteristics of emerging risks being their high degree of uncertainty and the fact that they are still evolving and changing is a limiting factor in the identification and use of KRIs in emerging risk management. For this and other reasons a majority of CRO Forum member firms surveyed do not use KRIs in their emerging risk processes, usually deploying KRIs only when an emerging risk has evolved into a current risk. Some of this divergence between firms in practice may reflect a difference between member firms in where they draw the line between what is a current and emerging risk.

For those CRO Forum member firms that use KRIs in their emerging risk process, KRIs can under certain circumstances provide early warnings of emerging risks that could hinder the achievement of corporate objectives and can improve risk assessment and mitigation planning for unexpected changes in risks. The key issue is to identify the most suitable and available KRIs.

Developing new KRIs can help risk management processes lacking data-driven information, or an excessive number of irrelevant metrics may overwhelm decision-makers, diverting attention from key risks.

When developing KRIs, it is useful to consult a mix of internal and external resources to compile a list of potential metrics. One could begin by identifying your company's high-level strategic objectives, then break these down into their key drivers, and finally identify metrics for those drivers. It is important to gather input from risk owners, as well as subject matter experts, to understand the current metrics and to gather recommendations for additional metrics. By identifying the root causes of enterprise risk events, you can then focus on identifying indicators that will help you track these risk events and better prepare for their occurrence.

KRIs should ideally display the following characteristics:

- **Measurability:** each KRI is quantifiable and can be tracked over time
- **Relevance:** KRIs align with the strategy
- **Reliability:** the metric should be reliable, without biases and predictable
- **Availability:** the metric should be readily available, whether internally or externally

On the other hand, qualitative KRIs have their limitations such as difficulty in observing and tracking performance objectively. Additionally, selecting too few or too many metrics for each risk can lead to incomplete coverage of the risk exposure, either by missing critical aspects or overwhelming the analysis with unnecessary data.



# 3. Evaluation of Emerging Risks

This section discusses the contiguous steps of the risk evaluation process, exploring different approaches on how emerging risks can be evaluated.

## 3.1 Who to involve

Among CRO Forum member firms surveyed, the internal assessment of Emerging Risks within the firm is predominantly conducted at the Group level (74%), with some also involving Business Units (42%) in a group-wide process.

Only a few companies include internal departments with external stakeholder contact (Investor Relations, Sales and Marketing, Investments) or engage external experts directly (only 3 out of 18 mentioned workshops with external experts) in the evaluation of emerging risks.

As mentioned in section 2.2, the integration of inputs from diverse internal and external experts with different backgrounds, disciplines, functions and hierarchical levels can help avoid groupthink and might enrich the evaluation. On the other hand, to effectively manage such a broad range of diverse experts may require investing significant resources in facilitation, training and guidance.

## 3.2 Different approaches to evaluation of emerging risks

This section sets out some of the approaches that can be used by companies for the evaluation of more complex and less data driven emerging risks.

### a. One-on-One Meetings / Interviews

Meetings are especially valuable when the Risk management function has already or seeks to create strong relationships with multiple experts or following significant changes in the business or broader sector, such as after mergers and acquisitions, new regulations, or notable macroeconomic events. They are also useful when the leadership team seeks a more comprehensive understanding of risks.

Meetings provide an opportunity for personalised, free-flowing discussions about risks, allowing conversations to be tailored to the specific expertise of individuals. This format offers the deepest insights into the risks faced by individual experts and encourages debate, prompting participants

to consider aspects they may not have previously considered. Additionally, meetings help prioritise discussions and facilitate peer reviews of risk perspectives, bringing to light interdependencies, blind spots, and biases.

However, organising and conducting numerous interviews and meetings can be time-consuming and resource intensive. To address this challenge, it is important to identify and engage the right subject matter experts (SMEs) and set clear objectives to ensure meetings are as effective as possible.

### b. Workshops

Workshops are particularly beneficial during periods of significant organisational change, when a thorough understanding of risks is essential. They are also valuable for prioritising discussions and conducting peer reviews of risk perspectives. Workshops offer a structured setting that encourages debate and compels participants to consider factors they may not have previously thought about. This format ensures that everyone has the opportunity to contribute, helping to reveal interdependencies, blind spots, and biases. Good practice includes inviting a relatively small number of participants to ensure all have time to input, and skilled facilitation to draw out different perspectives. Participants are usually relatively senior and so buy-in on the benefit of supporting the initiative is key ahead of scheduling time.

### c. Surveys

Surveys are especially useful when aiming to obtain a broad, but not deeply detailed, perspective on risks, particularly in organisations with numerous business units or those that are spread across different locations. Surveys can easily gather input from a wide range of employees and are also beneficial when there is interest from stakeholders in quantifying risks to some extent. This approach is less demanding in terms of time and resources compared to workshops and interviews, making it an efficient way to collect diverse perspectives. Surveys can be designed to have pre-defined answers to choose from, which makes them quick to fill in and to evaluate. On the other hand, adding fields where respondents can give their response in free form enables emerging risk managers to capture more nuances and unexpected feedback, but requires more effort in filling in and evaluating.

However, there is a risk that participants may view the survey as just a routine task, potentially leading to it not being completed with the necessary diligence.

**d. Delphi method<sup>9</sup>**

The Delphi technique is a scientific method to organise and manage structured group communication processes with the aim of generating insights on either current or prospective challenges, especially in situations with limited availability of information. It has been frequently used in various scientific disciplines ranging from health care, medicine, education, business, engineering and technology, social sciences, to information management, and environmental studies.

The Delphi technique offers several benefits<sup>10</sup>: It provides different analyses and information on complex issues. It promotes highly objective thinking, leading to efficient decisions based on expert opinions. The method allows for a wide variety of options to be considered and its anonymity helps to avoid conflicts between experts and encourages creative participation. Experts are also fully involved in resolving conflicts and facilitating implementation.

However, the method also has some disadvantages. It can be a time-consuming, often requiring multiple rounds to achieve the desired result. It can be costly due to the need for expert intervention and other resources. Good communication is necessary to streamline the search and reception of answers. Furthermore, the criteria used can be subjective and influenced.

**e. Scenario Planning and Stress Testing**

Scenario planning and stress testing can help companies prepare for a range of possible futures. By considering various “what if” scenarios, including extreme or unlikely events, companies can better understand potential vulnerabilities and develop contingency plans. This approach can be particularly useful for emerging risks, where there is a high degree of uncertainty.

The CRO Forum in its 2013 paper, *Scenario Analysis*<sup>11</sup>, suggests a list of objectives and principles deemed useful for setting up an appropriate Stress Testing & Scenario Analysis framework (see figure).

Scenario analysis means the analysis of the impact of a combination of (adverse) movements in risk factors. However, stress testing in its various characteristics generally is of a mathematical nature (99.5% shock, basis point sensitivity, goal seek stress on breaching a financial target), whereas scenario analysis generally includes expert judgement and practice experience with real-life events.

It can be beneficial to treat scenario development and scenario analysis or planning as discrete but linked exercises. Scenario development involves speculating and envisaging different plausible future outcomes and is the foundation for scenario planning, which involves the integration of developed scenarios in decision-making.

**Figure 2:** Stress testing & scenario analysis framework



<sup>9</sup> Beiderbeck D, Frevel N, von der Gracht HA, Schmidt SL, Schweitzer VM (2021). “Preparing, conducting, and analysing Delphi surveys: Cross-disciplinary practices, new directions, and advancements”. *MethodsX*. 8: 101401.

<sup>10</sup> See [Delphi Method: Definition, Steps, Pros, Cons, Uses & Examples \(questionpro.com\)](#)

<sup>11</sup> See CRO Forum [Stress-test and scenario setting](#) (December 2013). For an alternative framework for scenario development for insurers, see Cambridge Centre for Risk Studies’ [Developing Scenarios for the Insurance Industry](#) (page 7)

### f. Wargaming<sup>12</sup>

Wargames are representations of conflict or competition in a safe-to-fail environment, in which people make decisions and respond to the consequences of those decisions. Wargaming was developed by the military and is primarily used to evaluate strategies, explore scenarios and reveal unexpected weaknesses. At its core, this definition contains three elements that are essential to all wargames:

1. Players making decisions. Wargames are fundamentally about humans making decisions. Players must be able to choose how to respond to the challenges introduced by the wargame.
2. Friction is a critical element of every wargame, generally introduced by competition or conflict by the game mechanics.
3. Consequences for the decisions which are communicated to the player.

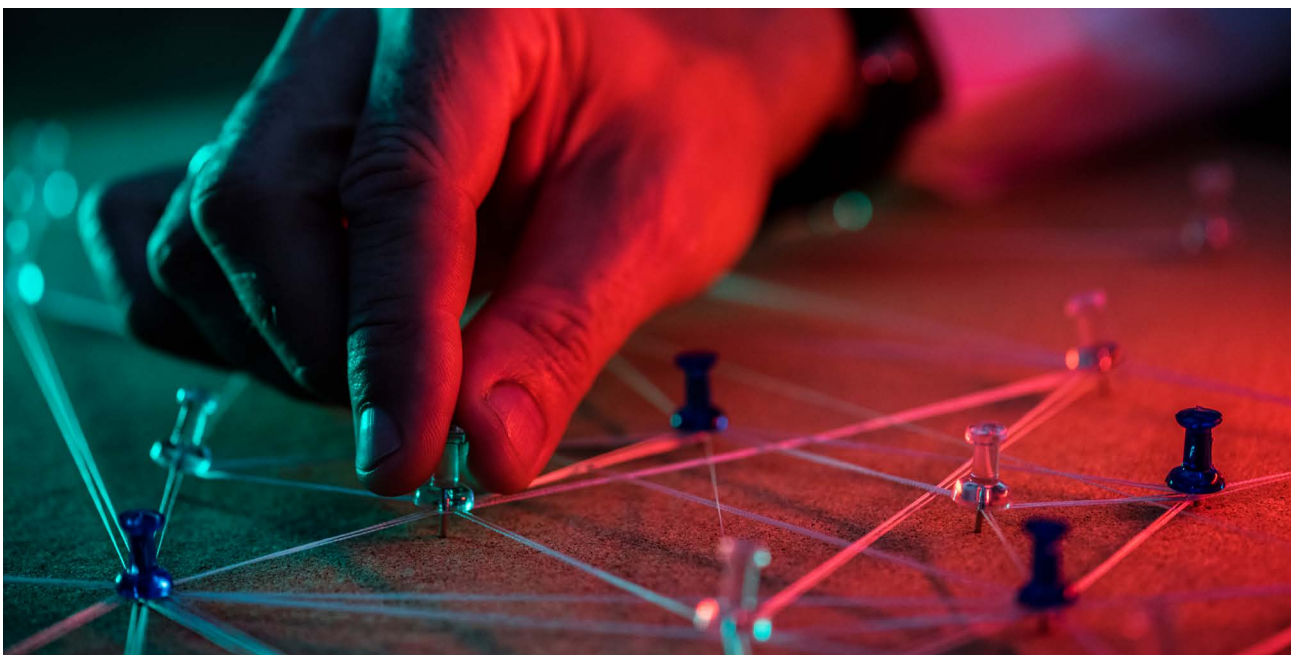
Wargaming has been adapted to be used in the business environment to test a variety of strategies. Within the context of emerging risk assessment, wargaming helps with the exploration of different scenarios and cross-effects as well as the assessment of response capabilities in a simulated environment. It also promotes cross-functional thinking and helps to challenge existing biases and assumptions. Wargaming is particularly useful when the game is well understood and the goal (“winning”) is clearly defined, which, for the purpose of emerging risk assessment, can constitute a limitation. Another limitation is that wargaming is a complicated and time-consuming endeavour which requires substantial preparation.

### g. Analysis of Relevance

The analysis of relevance is a multi-level analysis carried out to evaluate the materiality of emerging risks for the company by assessing their potential impact on the main traditional risk categories (market, technical risk, etc.) This approach starts by breaking down each emerging risk into risk drivers and identifying the transmission channels through which the emerging risk impacts the company through its traditional risk categories. The transmission channels help to identify the exposure factors, which can be measured using specific KRIs for each risk category. The contribution of each risk category to, for example, the solvency capital requirement (SCR) is subsequently taken into account to assess the overall potential financial effect.

This approach has the advantage of reducing human bias, by using referenced sources and quantitative data to evaluate emerging risks. On the other hand, it requires significant effort in terms of data collection.

**Note:** all methods mentioned above should not be used exclusively and should be adopted in accordance with the individual circumstance of the company and its Risk management function. For example, domineering behaviour in a workshop can be counterbalanced or prevented by survey-based discussion inputs.



<sup>12</sup> See Ministry of Defence, UK Government “Wargaming handbook”, 2017

### 3.3 Dimensions typically used to assess Emerging risks

Evaluating emerging risks involves the consideration of multiple dimensions to provide a comprehensive assessment. Below are some examples:

Dimension	Characterization			
<b>Potential Impact</b> (e.g. in % of Risk Bearing Capacity)	< 1%	1-5%	5-10%	>10%
<b>Time Horizon</b>	< 1 year	1-5 years	5-10 years	> 10 years
<b>Speed of Emergence</b>	Low	Moderate	High	Extensive
<b>Degree of Uncertainty</b>	Low	Moderate	High	Extensive
<b>Scientific Acknowledgment</b>	Low	Moderate	High	Extensive
<b>Preparation</b>	Prepared	Some Action Needed	Material Action Needed	Unprepared
<b>Opportunities</b>	Low	Moderate	High	Extensive

The survey of CRO Forum member firms revealed a wide variety of dimensions listed by member firms in their emerging risk evaluations. A few member firms also incorporate in their evaluation how emerging risks interconnect (see box on the right).

The criteria used for the assessment of the company’s preparedness for emerging events include for example:

- Consideration of risk management procedures in the internal model.
- Assessment of controls in place to limit financial and non-financial impacts on the business and customers, with actions taken to address identified gaps.
- Discussion of current activities compared to identified relevance.
- Co-assessment with subject matter experts (SMEs), potentially involving deep dives or preparatory studies for more proximate emerging risks.
- Qualitative measurement against the current risk management framework, internal regulation, governance framework, and existing mitigation actions.
- High-level response framework (Seek, Transfer, Reduce/Limit, Accept Actively Monitor) for each new risk or opportunity.
- Strategic assessment on trends.
- Readiness assessment based on structured checklists.

#### Focus: Inter-Connectivity of Emerging Risks



Emerging risks by their nature tend to be complex and highly interconnected, which can make them difficult to model and analyse. A few (re)insurers have built structured databases of potential trigger-consequence relations from critical emerging risk events, including quantitative assessments (probability / severity) to enable filtering and ranking.

With the right software, these databases can enable powerful visualisation of cause and impact trees, networks and feedback loops for specific emerging risks. These can be helpful for internal and external discussions of potential loss accumulations and can make specific tasks more efficient and transparent, for example identification, development and analysis of complex loss scenarios.

To ensure successful and productive engagement of management and underwriters, it is important to manage expectations (i.e. false perceptions of accuracy) and find the right level of detail.

Building such databases requires harnessing interdisciplinary expert knowledge from across the business. As a result (re)insurers have found such databases challenging to maintain and sustain, requiring the active contribution of a user group. To achieve the necessary user participation, insurers need to embed their databases and visualisation tools into their processes (i.e. require obligatory use) and incentivise colleagues to contribute.



### 3.4 Frequency of Assessment

As defined by the CRO Forum Emerging Risk Initiative (ERI), emerging risks are subject to a high degree of uncertainty as to their impact, likelihood and timing. They could threaten the viability of a company if appropriate and adequate action is not taken at the right moment in time. The identification of emerging risks at the earliest possible stage is crucial for the subsequent steps of risk evaluation, mitigation, monitoring and reporting. Some organisations adopt a rolling process and address rapidly changing risks by conducting the assessment quarterly. Conversely, other organisations may not observe significant changes in risks each quarter and may prefer to conduct the process biannually or annually instead.

For some companies there is probably a correlation between the frequency of the updates and the complexity of the methods and processes used to update, e.g. a Delphi method is probably costly to run on more than an annual basis.

Also, there is likely to be a correlation between the frequency of assessment and the granularity of the risks (i.e. the level of detail with which they are defined/captured). The more detailed the risk, the more likely a frequent update will capture insightful changes (e.g. use of Artificial Intelligence in hacking is a fast-moving feature and holds potential risk that can be updated on a very regular basis). Higher level defined risks (e.g. Cyber risk) may not need to be updated so frequently.



# 4. Management Actions: Risk Mitigation & Opportunities

In the complex landscape of risk management, it is important to navigate emerging risks by effectively implementing mitigation actions while simultaneously identifying and capitalising on opportunities.

This section considers how the management of emerging risks benefits from a comprehensive approach that integrates both mitigation and opportunity exploration within the company’s strategic framework, supported by a clear articulation of the company’s risk appetite and a governance structure that supports risk-aware decision-making at all levels.

## 4.1 Triggers for Management Actions

The emerging risk evaluation approaches described in Section 3.2 (e.g. scenario planning and stress testing) should help insurers identify appropriate management actions that can help mitigate the potential impacts of each emerging risk. These actions may vary in levels of effectiveness and speed and complexity to deploy and implement which means they may or may not be feasible in the scenario under consideration. To enhance preparedness, insurers can develop a management action plan which includes triggers for actions that aim to deliver the desired outcome under each scenario. Trigger levels may be linked to certain Key Risk Indicators (KRIs) that insurers monitor for emerging risks where appropriate, for example an insurer’s solvency ratio where progressively more extreme and impactful management actions are triggered as the solvency ratio deteriorates.

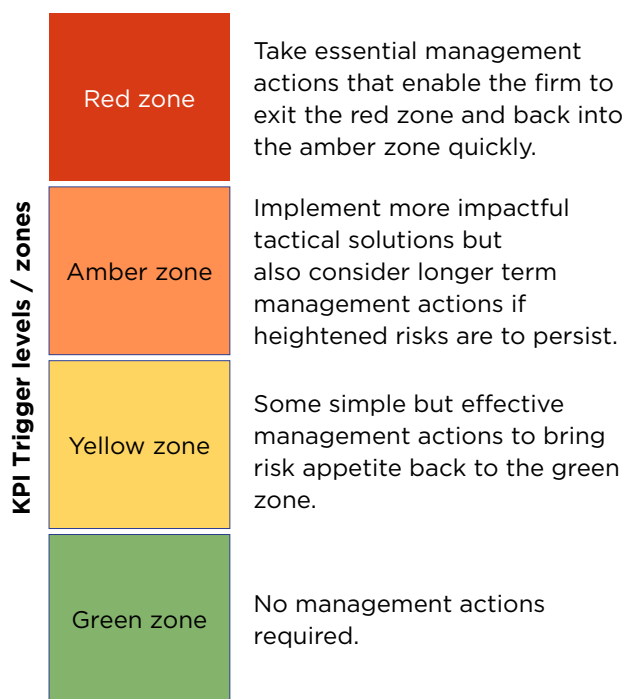
The diagram (see right) illustrates how an insurer may define trigger levels, in terms of coloured zones linked to the KRI, that would trigger management actions.

Trigger points and their management actions will be individual to every insurer and should be aligned with the company’s strategy and level of risk appetite.

Insurers may want to assess the appropriateness and potential effectiveness of the management actions chosen. This could be done by reperforming some of the assessment methods (e.g. stress and

scenario testing and wargaming) to simulate the risk event with the impact of the management actions proposed. This may be an iterative process which could highlight potential improvements / refinement to management actions until the residual risk is within risk appetite. Subject matter experts (SMEs) should be involved in this process along with senior management input and review.

**Figure 3:** Triggers for management action



## 4.2 Strategic Alignment of Mitigation Actions

Involving senior leadership in the risk dialogue helps to highlight the importance of emerging risks at the strategic level, ensuring they are integrated into corporate strategy and resource planning. This top-down engagement helps to foster a culture that values risk management and recognises its role in driving strategic decisions.

A robust Management Framework is the scaffold upon which effective mitigation actions and opportunities management are built. This framework should clearly define the roles and responsibilities of the risk management team, establish criteria for risk

prioritisation, and set forth mechanisms for ongoing monitoring and reporting. Such a framework ensures a systematic approach to risk management, where emerging risks are not only identified, evaluated and mitigated but also continuously scanned for potential opportunities.

Mitigation actions should be strategically aligned with the company’s objectives, ensuring that people and financial resources are allocated to areas that support growth and enhance financial and operational resilience. For example, when considering expansion into emerging markets, mitigation efforts should be geared towards understanding and managing the distinct risks of those markets. This could involve conducting thorough market analyses, establishing local partnerships to navigate regulatory environments, and investing in cultural training to enhance the effectiveness of local operations.

However, it is equally important to recognise the opportunities that these new markets may present. By managing the risks effectively, the company can differentiate itself and gain a first-mover advantage. For instance, a robust understanding of local market risks can lead to the development of tailored products and services that meet unique customer needs, thereby creating new revenue streams and enhancing the company’s competitive position.

In essence, the management of emerging risks is a dynamic and iterative process that requires a careful balance between protecting the company’s assets and pursuing strategic opportunities. This involves continuously assessing and adjusting strategies to respond to new threats and opportunities as they arise. By embedding both risk mitigation actions and opportunities management into the company’s strategic framework, the organisation not only safeguards its current operations but also positions itself for long-term success. This dual approach ensures that the company remains resilient and adaptable, demonstrating a proactive stance that is essential for thriving in today’s ever-changing risk landscape. Such a proactive approach fosters innovation, enhances competitive advantage, and builds stakeholder confidence, ultimately contributing to the sustainable growth and stability of the organisation.

## 4.3 Examples of Mitigation Actions

In the context of managing emerging risks, it is key to consider a variety of mitigation actions that can address the unique challenges these risks present.

### a. Transferring and Containing Insurance Risk

Catastrophe Bonds and Alternative Risk Transfer (ART): In addition to traditional insurance and reinsurance solutions, companies can use financial instruments like catastrophe bonds and other ART solutions to transfer the risk of extreme events to investors. This can help manage the financial impact of disasters that are difficult to predict and quantify.

As new information about emerging risks becomes available, underwriting guidelines should be adapted to reflect the changing risk landscape. For instance, should a new health pandemic emerge, underwriting guidelines for health and travel insurance may need to be revised to account for the increased risk. This could involve adjusting premiums, including new policy wording, or developing new insurance products that cater to the evolving needs of customers.

### b. Improving Diversification

Diversification of Risk Portfolio: Diversifying the risk portfolio can help mitigate the impact of emerging risks. By spreading risks across different geographic regions, lines of business, and customer segments, a company can reduce its exposure to any single risk or market. This can be especially important when dealing with risks that may have a concentrated impact, such as pandemics or region-specific and climate-change driven extreme weather events.

### c. Enhancing the Risk Culture

Creating a culture of general awareness about emerging risks within the company is important. This can be achieved through regular communication that highlights recent developments, potential impacts, and the steps being taken to address these risks. For example, newsletters, webinars, and workshops can be used to keep all employees informed and vigilant about emerging risks such as regulatory changes or technological advancements.

For emerging risks, it may be beneficial to develop training and education programs that are tailored to the specific nature of these risks. For example, if there is a new type of cyber threat, employees should receive training on the latest cyber security practices to prevent breaches. Similarly, if climate change is identified as an emerging risk affecting

certain regions, training on sustainable practices and environmental regulations would be key for employees working in those areas.

**Effective information sharing mechanisms** are relevant for managing emerging risks. Internally, this could involve creating cross-departmental teams to share insights and collaborate on risk mitigation strategies. Externally, companies can benefit from participating in industry forums, joining professional associations, or forming partnerships to exchange knowledge about emerging risks. Sharing information can help in identifying trends early and developing industry-wide responses to new threats.

**Enhanced Customer Engagement and Education:** Engaging with customers to educate them about emerging risks can lead to better risk management performance. For example, offering workshops on climate change adaptation strategies or providing resources on sustainable practices can help customers mitigate environmental risks. Encouraging the adoption of energy-efficient technologies and practices not only reduces their operational costs but also minimises their environmental impact, leading to a more favourable risk profile for both customers and the company.

#### **d. Engaging with Regulatory and Legislative Bodies**

**Regulatory Compliance and Monitoring:** Staying abreast of regulatory changes and ensuring compliance is very important for managing emerging risks. Companies should monitor legislative developments globally and nationally, especially in areas like data protection, to avoid legal and financial penalties.

**Public Policy Engagement:** Engagement with public policy is also important. An example could be the engagement with governments and regulators (directly or via industry bodies) as an advocate for public and regulatory policy action on emerging risks such as climate change, biodiversity loss and anti-microbial resistance, as well as shareholder advocacy on these risks with the companies that insurers invest in. Shareholder advocacy could include direct engagement with investee management and/or external thought leadership papers and communications.

## 4.4 Seizing Opportunities Amidst Risks

Two-thirds of CRO Forum member firms surveyed indicated that their Emerging Risks process actively encompass not only potential threats but also identifies emerging opportunities.

By embracing opportunities, companies can not only mitigate the potential negative impacts of emerging risks but also drive innovation, open new markets, and create value for their customers and shareholders. It is relevant for insurers to stay agile and responsive to the evolving risk landscape to capitalise on opportunities effectively. The following are examples of how to achieve this:

- **Advanced Analytics and Big Data:** Companies can leverage advanced analytics and big data to better understand and prepare for emerging risks. By analysing large datasets, they can identify patterns and correlations that may not be visible through traditional analysis. For example, predictive modelling can help anticipate the likelihood of natural disasters or the impact of climate change on specific geographic areas, allowing for better risk pricing and reserve setting.
- **Strategic Partnerships:** Forming strategic partnerships with technology companies, research institutions, or other insurers can provide access to new insights and technologies for managing emerging risks. For example, working with a technology company specialising in artificial intelligence could improve the company’s ability to detect fraud, streamline the processing of claims or assess the state of health of electric batteries.
- **Innovative Insurance Products:** To keep pace with emerging risks, companies can develop innovative insurance products that cater to new demands. For example, as the sharing economy grows, there is a need for insurance products that cover peer-to-peer transactions, such as ridesharing or home-sharing. Other examples related to “mobility and the future of motor insurance” could be the launch of unique new insurance propositions for electric vehicles with charger repair and no-charge vehicle salvage, or the training and development of in-house motor claims repair network to become experts in new motor technologies.
- **Investment in Research and Development (R&D):** Investing in R&D can enable insurance companies to stay ahead of emerging risks. This could involve researching new materials, technologies, or processes that could change the risk landscape. For example, understanding the implications of autonomous vehicles on auto

insurance or the potential risks associated with decarbonisation technologies can help insurers prepare for future market opportunities.

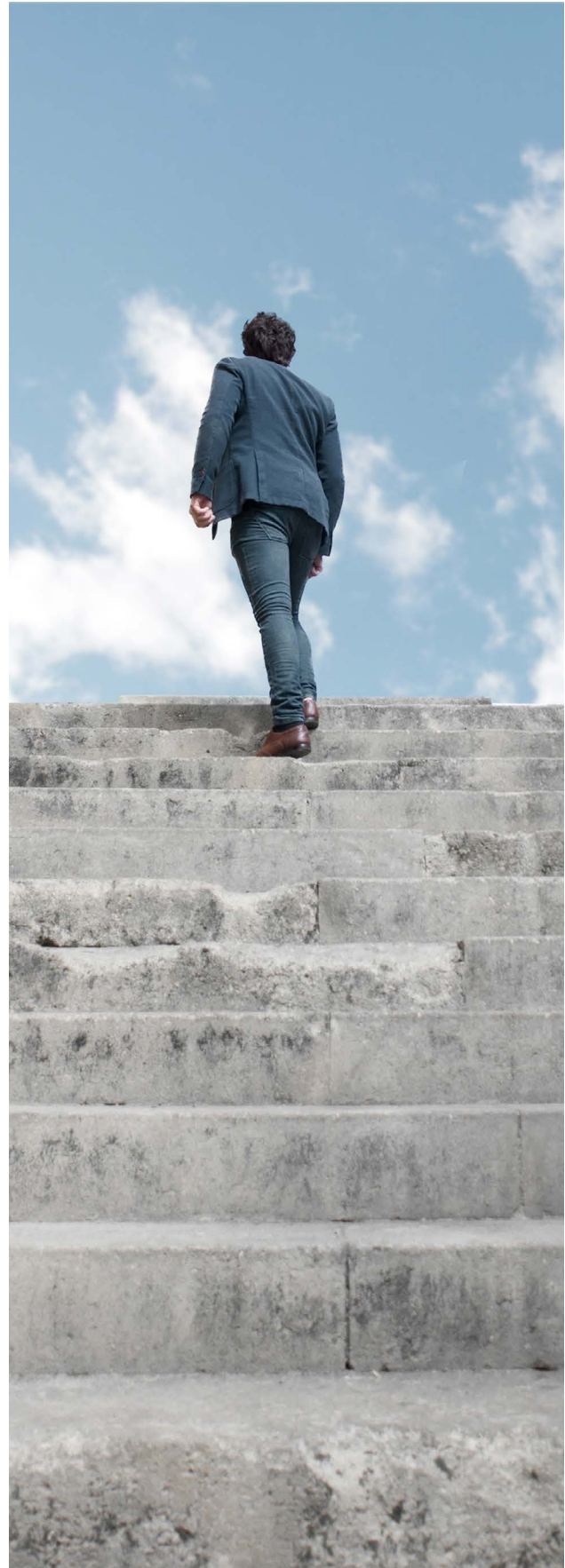
- **Sustainability and Climate Change Products:** As awareness of climate change increases, there is a growing market for insurance products that support sustainability. Companies can offer products that provide coverage for renewable energy projects, green buildings, and businesses that adopt sustainable practices, positioning themselves as leaders in the fight against climate change.
- **Product Diversification:** Diversifying product offerings to include coverage for new and emerging risks, such as renewable energy projects, autonomous vehicles, or the gig economy, can enable the breakthrough of innovative technologies, open up new revenue streams and attract a broader customer base.
- **Reputation as a Risk Management Leader:** By effectively managing and capitalising on emerging risks, companies can build a reputation as “thought-leaders” in risk management. This reputation can enhance brand value, attract top talent, and increase customer loyalty.

#### 4.5 Concluding observations

The strategic management of emerging risks is a dynamic process that requires a nuanced balance between mitigating threats and seizing opportunities. Through a structured approach that involves senior leadership, a robust Management Framework, and strategic alignment, companies are well-equipped to navigate the uncertainties of the future.

Finally, evaluations of the effectiveness of mitigation measures and opportunities should also be put in place: for example, where suitable, analyses using key risk indicators (KRIs) to measure the impact and effectiveness of the various initiatives can be useful. One-third of CRO Forum member firms surveyed indicated that they monitor KRIs for certain emerging risk.

Future developments for mitigation actions and opportunities include leveraging advanced technologies like Artificial Intelligence (AI), Internet of Things (IoT), and blockchain for predictive analytics, real-time monitoring, and forming strategic partnerships to focus on personalised risk solutions.



# 5. Monitoring & Reporting

This section considers the monitoring of emerging risks and their internal and external reporting (including artificial intelligence (AI) supported KRIs). It discusses dimensions and scales, frequencies and the right point of time for reporting. The section shows how different stakeholder expectations can be understood and met.

## 5.1 Factors commonly considered for emerging risk monitoring and reporting

Insurers often use multiple assessment criteria (2 to 4 criteria being most common according to the survey of CRO Forum members) to measure and report emerging risks. The most frequently used categories include impact, likelihood, velocity, trend, and preparedness. 3 to 10 years is the most common time horizon for emerging risks considered by CRO Forum members. This ensures they are distinguishable from current near-term risks, although shorter time horizons are used by some member firms.

While additional assessment criteria provide more in-depth insights, having too many of them may make it more challenging for the reader to comprehend. This explains why risk radars or other forms of visualisation are often considered to be more effective. Similarly, the typical timeframe of 3 to 10 years suggests that insurers are focusing on the medium term to narrow down the emerging risks in scope, at the exclusion of more remote risks. Reflecting their importance for decision making and driving engagement, impact and likelihood are the two most common factors considered by CRO Forum member firms surveyed in their emerging risk monitoring.

KRIs are often useful in monitoring risks, which are identified many years before any impact is seen and can be useful in indicating when an emerging risk is nearing its manifestation. However, due to the nature of emerging risks it may be difficult to find suitable KRIs as it is often unclear how emerging risks may evolve, or what type of indicators may be used to give a preventive warning. Often, such indicators are only identified after retrospectively reviewing experiences which is not usually possible for emerging risks. Internally within insurers, it can be a challenge to identify a single owner of an emerging risk and responsible for KRI monitoring.

This may particularly be an issue with risks that hinge on tipping points. For example, climate risks are often modelled (particularly for long dated life insurance business) on a very long-time horizon, meaning there is a large cone of uncertainty, and its impacts can vary substantially based on assumption changes. This represents a challenge for emerging risk reporting in being able to highlight the risk in a meaningful way.

## 5.2 How emerging risks are reported internally

From an internal reporting perspective, the use of a detailed emerging risk report is a common practice. Visualisation through a risk radar (see below CRO Forum Risk Radar as one possible template) or heat map is also used.

Risk teams should therefore look at how engagement can be extended to include other teams in regular updates. This is where wider use of risk radars could be helpful, as they provide a more succinct and easily understood update compared to a long report, and extra detail is not necessarily required for wider circulation.

An example of the CRO Forum risk radar is shown on the next page. The radar encompasses a simple diagram that can be shown on one page with key dimensions demonstrated – here the type of risk, level of risk, time horizon, and trends.

## 5.3 Common practices for external emerging risk reporting

For external reporting, the survey of CRO Forum member firms confirmed that most members (84%) covered emerging risks in their annual reports in some form. Emerging risks are less commonly covered in investor presentations and CRO reports. However it highly depends on what risks each company define and categorise as “emerging risk”.

There is no standardised practice for these published external reports. Some CRO Forum member firms produce separate reports, research papers or even dedicate webpages covering emerging risks, while others include a subsection in their main annual report. The form of presentation also varies from brief paragraphs highlighting key emerging risks to more graphical formats.

# Emerging Risk Radar 2024

## Trends

-  Ageing and Health Concerns
-  Economic Instability
-  Environment and Climate
-  Sustainability
-  Shifting Geopolitical Landscape
-  Technological Development
-  Demographic and Social Change



Emerging risks may be less of a focus for external than internal reporting, as often external annual reports have limited space and prioritise the reporting of key risks in the near term, or areas where investors have more interest in. An example of investor-driven emerging risk disclosure is climate and sustainability risk. On the other hand, investors may be less aware of the need to consider some emerging risks, if these are not highlighted by company annual reports. Nevertheless, external emerging risk reporting on the corporate website is increasingly expected by (ESG) rating agencies, customers and stakeholders.

It can also be observed from various corporate websites that reinsurers compared to direct insurers tend to adopt a more dedicated and detailed approach to external reporting of emerging risks to create innovative solutions for clients and manage potential large-scale risk accumulations. Their reports often provide detailed insights of the relevant emerging risks or topic which add a lot of value for the rest of the insurance industry.

## 5.4 Tools and processes that can enhance emerging risk monitoring and reporting

For the reasons set out in section 2.4., only a minority of CRO Forum member firms surveyed reported having dedicated tools and KRIs for the monitoring of emerging risks. Further, almost all firms use a manual database for this type of analysis, with only 5% reporting use of an automated tool, although a number of firms augment their manual processes with such automated tools (example described in the box on the next page).

The results from the CROF member firms surveyed showed that currently for the majority of firms emerging risk processes are manual and only comprehensively refreshed once to twice a year. While this may be appropriate for many emerging risks, more proximate risks may need more frequent monitoring, especially to quickly react to any changes.

### Automated tools



A number of CRO Forum member firms use or have trialled **automated tools** to assist with the analysis and monitoring of risks.

In such tools freely available and reliable data sources are used to create a centralised database. Public APIs or web scraping techniques are used by an automated **algorithm** to download the data.

An automated tool processes the captured data to provide analysis of the key indicators that have been developed. Such a tool can then **produce summary tables and graphs** for reporting purposes in a fully automated manner with **no human intervention required**. This means resources can be more effectively used on interpreting and analysing the data, and updates can be done frequently.

This can initially involve significant subject matter expert input to review and rate relevance of web-scraping outputs, which can then be used as **training data for AI machine-learning** to replicate the human expert judgment in selecting and ranking intelligence usefulness and relevance. The challenge is to do this successfully, so that human intervention is no longer required.

Looking to the future, Artificial Intelligence (AI) may be a useful tool for firms to introduce some level of automation through tools to better identify risks and also in producing reports. Manually identifying risks relies on human judgement and is time consuming, so looking at data focused tools could introduce more objectivity into the process as well as making it easier and quicker to update. For example, Large Language Models (LLMs) can process organisations’ own data, such as committee papers, as well as external sources to identify relevant topics. Once set up, such a model could be refreshed to give frequent updates, with human input being more efficiently focused on review, such as defining whether the topic is an emerging risk, and how to delimitate/further define it.

Such an automated approach can also help to make emerging risk reporting more engaging. Many emerging risks may stay on the horizon for multiple cycles of reporting and so with little change emerging risk reports can become stale. By producing automated reports, more time can be spent on analysing the risks and bringing out key

messages. Further, by having automated databases in place, a variety of charts can easily be produced to better reflect trends rather than relying on a static format. AI may also be used to better improve engagement and source new ideas.

### 5.5 Benefits and costs of different reporting frequencies

Most companies typically rely on annual or biannual reporting schedules for refreshing their emerging risk profiles, providing a comprehensive overview of the emerging risk landscape. However, this may not be frequent enough under many circumstances. When a specific threat is identified, quarterly reporting can be highly effective, offering a more granular view and facilitating proactive management. Additionally, ad hoc reporting can be valuable for addressing unexpected emerging risks that do not fit within the regular reporting schedule. This flexibility ensures that emerging risks are managed in real-time, minimizing potential negative impacts. By adjusting reporting frequencies based on the nature and immediacy of threats, companies can enhance their risk management efforts. Choosing the right frequency is also a question of stakeholder expectations and company resources.

### 5.6 Balancing the expectations of different audiences

Tailoring the Emerging Risk Report content and frequency to align with the varied needs of its audience is crucial for gaining stakeholder support.

Various experts might be interested in detailed analysis (e.g. a firm’s IT, HR and Sustainability functions would be most interested in Technology, Societal and Climate Change emerging risks respectively), while Supervisory boards expect more summary analysis and key take aways. It is essential to understand different stakeholder expectations and generate tailored communications.

When dealing with conflicting expectations, balancing various stakeholders’ views is crucial. It is often beneficial to present these conflicting views or assessments clearly to decision-makers, before asking them to arrive at a consensus position. This proactive approach ensures that all parties are aware of the differing priorities and facilitates a collaborative effort to align interests and enhance risk management. Establishing regular updates and open channels for ongoing dialogue helps keep all parties informed and engaged.





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