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McKinsey on Risk & Resilience

From corporates to banking: Strategic perspectives in global risk management

Number 19, June 2025

The articles in *McKinsey on Risk & Resilience* are written by risk experts and practitioners from McKinsey's Risk & Resilience Practice and other firm practices. This publication offers readers insights into value-creating strategies and the translation of those strategies into company performance.

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Introduction

The grip of uncertainty is stronger today than it has been in some time. Institutions are under siege from technology-driven upheaval, such as gen AI; geopolitical forces; and economic disorder. In fact, the total potential global impact of AI is estimated at $26 trillion—approximately 25 percent of the global economy. Yet many organizations are unprepared. The environment is too turbulent and fast-moving.

In our 19th edition of *McKinsey on Risk & Resilience*, we examine how a select group of leaders have positioned their institutions to not only survive amid a constant state of disruption but also quickly pivot and gain an advantage. To get there, they have taken bold action across their organizations by making resilience a top priority.

Chief risk officers (CROs) are central in leading this effort. CROs and risk professionals—working with other C-suite executives and board members—have realized that understanding and mitigating organizational risks is essential for success. In this issue, we outline your road map for establishing a mature risk management approach built both for today and for long-term resilience.

Navigating geopolitical risks. Geopolitical risks, such as tariffs and trade wars, can have significant impacts on organizations. McKinsey's research on navigating tariffs with a geopolitical nerve center offers valuable insights. Establishing a dedicated team to monitor and analyze geopolitical developments can help organizations stay ahead of potential disruptions.

The role of gen AI. The rise of gen AI presents both opportunities and challenges for financial institutions. McKinsey's research on how financial institutions can improve their governance of gen AI highlights several key areas, including risk assessments, governance frameworks, employee training, and continuous monitoring.

Prioritizing governance, risk, and compliance. Effective governance, risk, and compliance practices are the foundation of organizational resilience. A recent study by McKinsey highlights several key areas for improvement. Forward-looking companies apply a top-down approach to risk management, incorporating horizon scanning, scenario-based analysis, and stress testing.

What is your CRO archetype? Following an extensive survey of CROs, we have identified three key archetypes. Our online, interactive self-assessment quiz can determine your risk management persona. The best CROs are versatile and well-rounded leaders who are self-aware about their go-to archetype's benefits and limitations and who exhibit the ability to seamlessly shift operating models among all three archetypes when needed.

Strategic resilience. Building a strong risk management program begins with strategic resilience—an organization's ability to anticipate, prepare for, and respond to disruptions. The auto industry, for instance, has faced numerous crises, from supply chain disruptions to technological shifts. According to McKinsey, companies that have successfully navigated these challenges have done so by adopting a strategic resilience framework.

A practical example of building resilience. Carlsberg's resilience strategy, as discussed by CEO Jacob Aarup-Andersen, provides a practical example of how organizations can build resilience through structural, cultural, and strategic measures. Carlsberg builds resilience by establishing organizational mechanisms that allow for quick and effective adaptation to shocks, including ongoing capacity-building and integration.

We hope you enjoy these articles and find the ideas worthy of application. Let us know what you think at McKinsey_Risk@McKinsey.com and on the McKinsey Insights app.

Thomas Poppensieker
Senior partner and chair,
Global Risk & Resilience Editorial Board

Navigating tariffs with a geopolitical nerve center

A nerve center can help companies chart a course through expanding tariffs and trade controls by orchestrating nine rapid actions, from tariff operations to supplier diversification.

by Cindy Levy, Mihir Mysore, Shubham Singhal, and Varun Marya

Tariffs and trade controls are expanding rapidly around the world. Macroeconomic uncertainty is growing. Second-order effects of government actions are multiplying.

The first global economic shock since the COVID-19 pandemic has arrived.

While geopolitical tensions have been rising for several years, the recent wave of trade controls and reciprocal tariffs has come on quickly and intensely. Not since the 1930s has the world seen this level of tariff activity.

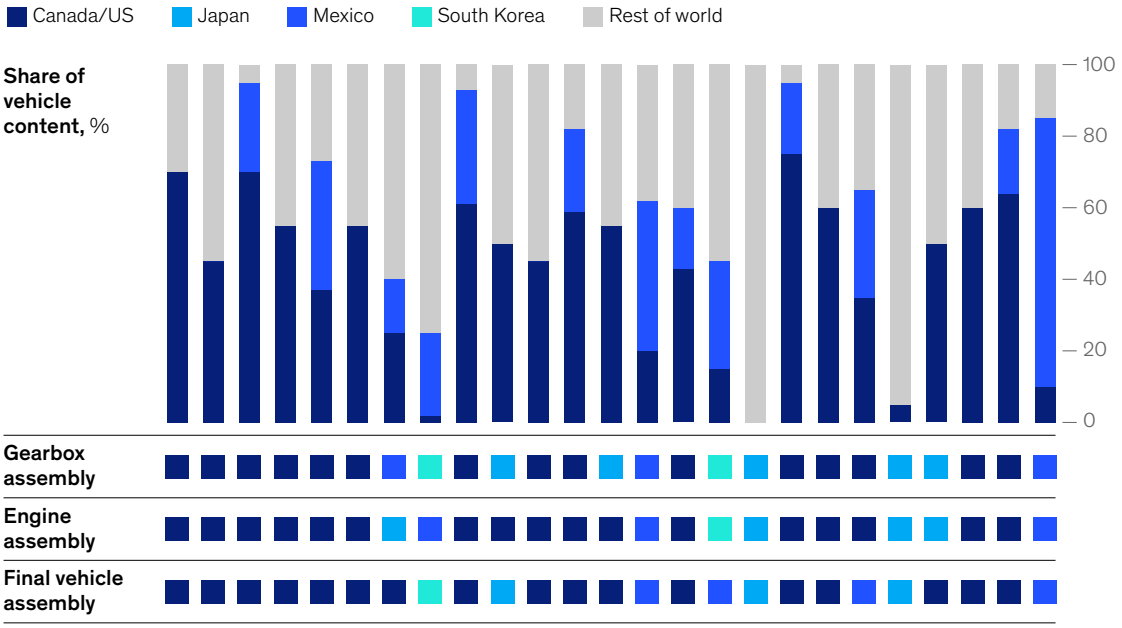
The impact on businesses is high, unevenly distributed, and likely to remain that way. In the automotive industry, for example, the amount of content that comes from different countries ranges widely by car model, making the impact of tariffs highly variable and creating cascading effects through automakers' supply chains (exhibit). Take the example of one 2025 hybrid electric vehicle: Its gearbox is made in Japan, roughly 30 percent of its parts originate in the United States or Canada, and another quarter are sourced from Mexico; the engine is assembled in the United States and the final vehicle in Mexico. Other car models comprise almost entirely imported parts; a few are largely sourced and assembled in a single country. This complexity is not limited to the automotive industry—many sectors and regions face similar challenges.

While business leaders confess to feeling overwhelmed at times, they are addressing day-to-day issues as best they can. Many companies have calculated initial estimates of their exposure to new tariffs and are taking steps to reduce it. Some North American organizations are applying

Exhibit

The impact of tariffs varies significantly across models, given differences in content strategy and production location.

Content by country of origin, top 2025 model passenger vehicles,[1]
each column represents one vehicle model



[1]Top 25 models based on 2024 global sales.
Source: American Automobile Labeling Act reports, 2024 and 2025 model years; S&P Global data

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for certifications under the United States–Mexico–Canada Agreement (which has a high burden of proof) rather than relying on most-favored-nation (MFN) status, as they had in the past. Teams are focused on filing for duty drawbacks, obtaining Temporary Importation under Bond (TIB) certifications, and expanding access to free trade zones and bonded warehouses to preserve cash and avoid tariffs where possible.

Even as they grapple with immediate challenges, company leaders are unsure about what comes next. With the pandemic crisis still fresh in their minds, they find themselves again facing a highly uncertain environment with few parallels to guide them and no clear sense of when normalcy might return. They hesitate to make strategic moves because they are unsure how long the tariffs may last. They realize that a range of tariff consequences—from a sharp macroeconomic impact to trading-partner responses to national-security reassessments—could cause sudden changes in trade regimes.

Given the web of interdependencies that govern global trade, business leaders realize that they can't define and prepare for the path forward using traditional forecasting and planning methods. What they need is a geopolitical nerve center—a central hub that tracks new developments in global trade, plans across several horizons, and guides decision-makers on ways to mitigate the impact of the expanding tariffs and trade controls.

Setting up a geopolitical nerve center

To effectively address today's radical uncertainty, business leaders can lean on a mechanism that many found essential for navigating the COVID-19 crisis. A nerve center can help companies move from a focus on immediate tactical responses to more comprehensive plans balanced across time frames. However, since the situation today is dramatically different from the pandemic, a geopolitical nerve center requires a unique structure.

A nerve center needs to accomplish three tasks. First, it should comprise cross-functional initiative teams that tackle the full range of potential tariff impacts on different parts of the company. Second, the teams need to cover multiple time horizons to ensure that the organization can address both urgent issues and longer-term challenges. Finally, a planning team, informed by distinctive analytics, should coordinate the initiative teams and enable fast decision-making.

Stand up cross-functional initiative teams

Companies should establish teams focused on tracking the impact of tariffs across their operations. We recommend nine targeted initiatives, although the number and nature of the initiatives may vary based on company context.

Tariff operations. This initiative's goal is to minimize delays at border crossings, reduce exposure to avoidable tariffs, and prevent cash flow from being locked in tariff prepayments (by expanding access to bonded warehouses, for example). It should also focus on ensuring accurate, timely shipments that don't exceed trade control quotas.

Inventory and supplier operations. Given the significant increase in and complexity of criteria that shipments must satisfy at border crossings, ensuring the accuracy of supplier paperwork is imperative. This initiative focuses on strengthening oversight of border crossing filings, ensuring sufficient orders of critical stock with minimal tariff exposure, and establishing a system for sharing data with suppliers.

Stakeholder engagement. This initiative aims to inform government agencies and other stakeholders—where appropriate and with the guidance of counsel—about the operating environment and the impacts that tariffs are having on industries and individual companies.

Product engineering and classification management. A small difference in the US Harmonized Tariff Schedule (HTS) codes can significantly affect tariffs owed. This initiative helps companies optimize product specifications to qualify for lower-rate tariff categories and ensure that parts and SKUs are correctly classified.

Commercial optimization. The focus of this initiative is to manage pricing updates and pass-throughs, optimize the product portfolio (including eliminating

some product categories that are likely to have negative margins), boost after-sales as consumer demand for big-ticket items may drop, and optimize commercial levers.

Cost reduction and cash preservation. Many companies realize the need for greater efficiency in the near to medium term in light of potential lower demand due to price increases, the prospect of a macroeconomic downturn, and cost increases on their purchases due to supplier pass-throughs of tariffs. This initiative's focus is to preserve cash and reduce costs so the organization is prepared for multiple scenarios.

Manufacturing and remanufacturing. This initiative's primary focus is defining a plan to ramp up manufacturing and product circularity or remanufacturing in core end markets. It is likely to be a longer-term initiative for many organizations.

Supplier network and supply chain optimization. Another longer-term initiative is examining future supplier networks and supply chain footprints. Part of this team's agenda is establishing criteria under which it may make sense to shift suppliers or supplier footprints to source more from lower-tariff countries.

Business portfolio shifts. This initiative is aimed at shifting the company's portfolio toward core, high-margin businesses through divestments, capital reallocation, and M&A.

Split team focus among immediate, medium-term, and long-term horizons

Companies' current responses to evolving tariffs cover multiple planning horizons and timelines. A discussion about accelerating the shipment of specific parts can suddenly shift to a debate about the right time to diversify suppliers. To ensure that nerve center teams stay focused on the right actions, it is important to align on the time horizon that each team should target for impact and the level of rigor required in its analysis (table).

Horizon one (this week to this month). This horizon covers immediate priorities and will usually encompass the tariff operations and supplier operations initiatives. It focuses on identifying and resolving the areas of biggest tariff exposure that the organization faces.

Horizon two (this quarter to this year). Tasks within this horizon typically require rapid analysis and decision prioritization, informed by geopolitical experts, followed by execution within 12 months. This horizon usually covers initiatives on cash preservation and cost control, tariff engineering and classification management, commercial actions, and stakeholder engagement.

Horizon three (the next normal). The focus of the furthest-reaching horizon is to figure out the organization's "next normal." The nerve center may need to reimagine the company's manufacturing operations and consider a dramatically reshaped supply chain footprint. It also should consider what assumptions would have to change to make those modifications necessary. It may even reimagine the shape of its entire industry, which may prompt consideration of business divestments or acquisitions needed to thrive in that future scenario.

Create a central planning team to enable and coordinate initiative teams

The initiative teams need the support of a planning team that organizes daily coordination meetings and creates situation reports to ensure aligned assumptions. Given the fast-evolving environment, companies should invest in analytics and accurate data to capture signals relevant to their operations in new tariff-related announcements and to assess their positions relative to competitors. Below are six analyses that organizations should consider conducting.

Tariff scenario modeling. Nuances within tariff announcements can have meaningful implications for a company's operations and financials. A trade control team can help business leaders interpret new developments and create tariff scenarios that decision-makers can use as a basis for planning.

Tariff cost modeling. This analysis involves studying the major flows of the company's products, from the customer and back to several supplier tiers, mapping them to their respective HTS codes (or equivalents outside the United States), and using the volumes based on these models to estimate the

Table

Action teams tracking tariff impact should cover three horizons.

Horizon one (this week to this month)

Tariff operations	Inventory and supplier operations
Optimize logistics, warehousing, and transport operations	Work with suppliers to ensure timely shipments
• Ensure accurate and timely filing of duty drawbacks and Temporary Importation under Bond (TIB) certifications, from filing to refund • Ensure complete paperwork to minimize port clearance delays • Optimize customs-bonded warehousing and use of free trade zones • Optimize shipment timing to manage tariff rate quotas • Apply for de minimis exemptions	• Update safety stock calculations and inventory plans for critical parts • Ensure timely ordering and use of components • Conduct preshipment quality checks and contract enforcement to minimize delays and postdelivery quality issues • Set up supplier data sharing for real-time transparency

Horizon two (this quarter to this year)

Stakeholder engagement	Product engineering and classification management	Commercial optimization	Cost reduction and cash preservation
Inform governments and other stakeholders about tariffs' impact	Optimize product specifications to qualify for lower-rate tariff categories	Optimize product portfolio	Maintain optionality across multiple scenarios
• Research alternate supplies, extent of impact, and possible pathways to achieve economic goals • Align with industry groups or associations • Engage relevant stakeholders • Prepare applications for exclusions where appropriate and applicable	• Redesign product specifications for lower-rate Harmonized Tariff Schedule (HTS) codes • Ensure accurate classification of HTS codes for each part • Shift manufacturing processing locations to optimize substantial transformation thresholds[1] • Standardize core models and components across platforms	• Increase cash and financing offers • Fine-tune dealer or franchisee performance incentives • Optimize loyalty and sales incentives • Optimize prices and update value propositions, including passing through costs where possible • Disclose tariff surcharges • Reduce SKU variation, including exiting loss-making SKUs • Bundle upgrades	• Optimize working capital • Reduce operating expenses, including procurement costs • Implement zero-based budgeting • Implement spending transparency and controls • Pause low-ROI, noncritical investments • Monetize noncore assets • Reduce or halt shareholder distributions

Horizon three (the next normal)

Manufacturing and remanufacturing	Supplier network and supply chain optimization	Business portfolio shifts
Ramp up manufacturing and product circularity in core end markets	Shift suppliers or supplier footprint	Shift portfolio toward core, high-margin businesses
• Reduce bottlenecks in manufacturing capacity • Reshore manufacturing capacity • Increase remanufacturing and circularity	• Investigate nearshoring and regionalization of operations • Implement a multisourcing strategy • Segment suppliers by tariff exposure	• Identify highest-growth and highest-margin businesses in future scenarios • Divest low-growth or underperforming businesses • Prepare M&A checklist

[1] In trade law, substantial transformation threshold determines if a product processed in a country other than its origin is considered to have originated from that processing country, often for preferential tariff treatment.

tariff costs under the likeliest scenarios. The models should be dynamic and capable of accommodating multiple scenarios to keep up with rapid changes. The resulting analysis can help decision-makers set targets for the organization and estimate the full potential impact of tariffs across operations.

Tariff competitive advantage modeling. This analysis models the opportunities and risks relative to competitors by mapping tariff and trade control exposure for the company's peer group. It is central to understanding the actions across commercial levers, product rationalization, and business portfolio rationalization that will produce optimal results.

Trade flow analytics. Understanding how trade corridors may shift, and the flow of specific goods across them, is critical for making medium- to long-term decisions that align the company's commercial focus and operations. This analysis should cover not only tariffs but also free trade agreements, export and investment controls, and industrial policy measures.

Demand modeling and pricing implications. This involves assessing tariffs' impact on demand based on a combination of sector-specific elasticities, macroeconomic impacts across various scenarios, and government incentives and business spending shifts. The analysis can help decision-makers define targets for cost reduction and cash preservation initiatives, as well as provide an early warning on the extent of demand challenges, which in turn can help inform pricing implications and commercial optimization actions.

Risk identification across supplier tiers. A company's suppliers may need to take rapid actions to protect their finances, including shifting allocations, reducing SKUs, and even changing manufacturing locations. Understanding the risks across multiple tiers of the supply chain is essential to defining mitigation actions and reducing exposure to disruptions.

Tariffs have emerged as the most urgent topic for many businesses and the world economy and will likely remain so for most of 2025. Setting up a geopolitical nerve center can help business leaders navigate the uncertainty and identify opportunities to gain a competitive edge.

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This article was edited by Joanna Pachner, an executive editor in the Toronto office.

How financial institutions can improve their governance of gen AI

A comprehensive scorecard can help companies redesign their risk governance frameworks and practices for gen AI and harness the power of this transformative technology.

This article is a collaborative effort by Amit Garg, David Schoeman, Gabriel Morgan Asaftei, Kevin Buehler, and Liz Grennan, representing views from McKinsey Digital and McKinsey's Financial Services and Risk & Resilience Practices.

Gen AI is reshaping the financial-services industry, from how banks serve customers to how executives make decisions. For all the benefits the new technology offers, including workflow automation, software enhancement, and productivity gains, gen AI also poses significant risks. It can expose a financial institution to legal and reputational risks and increase its vulnerability to cyberattacks, fraud, and more.

Trying to harness the benefits of this technology while warding off the risks can feel like a tightwire act. The heightened concerns stem from how gen AI works. Traditional AI systems are built to manage tasks that are narrow in scope by using proprietary business data. By contrast, gen AI can create new content—often by using public, unstructured, and multimodal data—through a series of complex, multistep processes that can create more opportunities for misuse and error. Traditional AI-risk-governance systems aren't designed to oversee these additional layers of complexity.

Financial institutions will need to update their AI governance frameworks to account for this increased complexity and the greater points of exposure. This will mean incorporating model risk management (MRM) and new technology, data, and legal risks into their enterprise risk model. They will need to review their oversight of AI and then assess how best to manage gen-AI-specific models going forward.

In this article, we explain how financial institutions can update and continually monitor their AI governance frameworks using a gen-AI-risk scorecard and a mix of controls. In this way, they can better identify and mitigate potential risks from gen AI and other technologies long before those risks can cause substantial financial or ethical problems.

Upgrade gen AI governance

To account for gen AI and its potential effects on business, leaders will need to systematically review all risk areas touched by the technology. They should take stock of their oversight systems, gen AI models, and intellectual property (IP) and data use, plus a range of legal and ethical factors.

Oversight systems

In most current arrangements, a single group (such as an MRM committee) oversees all gen AI applications. This approach typically isn't a good fit for gen AI systems, because they often comprise a blend of different models and software-like components, each of which may need specialized oversight. For example, a gen-AI-powered chatbot that provides financial advice to customers may expose companies to a range of technological, legal, and data-related risks. Accordingly, financial institutions need to decide which gen AI components only require model risk scrutiny and which require a joint review with other risk cells. Close coordination across risk committees can ensure thorough oversight.

Gen AI models

Risk leaders at financial institutions will need new models to manage gen AI risk across their companies. In the past, AI models were built primarily to do one specific task at a time, such as making predictions based on structured data and sorting data based on labels. Such tools might mine past loan data, for instance, to forecast the likelihood that an applicant might default on their loan or to identify optimal loan pricing.

With new multitasking gen AI models, banks can do more than just predict and categorize. They can devise and deliver personalized service, improve customer engagement, and enhance operational efficiency in ways that they couldn't with traditional AI. For example, gen AI models can automatically create new loan term sheets based on their analysis of similar, previously executed loans. This not only reduces manual work but also can speed up the closing process and improve the borrower's experience.

However, because gen AI models are trained on both public and private data, they can produce information or responses that are factually incorrect, misleading, or even fabricated—generating, for example, inflated income totals or an imagined history of bankruptcy for a customer querying a gen AI application about loan qualifications. These issues can be minimized using retrieval-

augmented-generation (RAG) applications that combine external and internal data to ensure accurate responses. The RAG applications can include legally reviewed language about lending rules and can enforce strict conversation guidelines to help banks manage customers' interactions with gen AI tools.

IP and data use

Gen AI tools can introduce liabilities involving inbound and outbound IP and its oversharing. For instance, a gen AI coding assistant might suggest that a bank use computing code that has licensing issues or that may inadvertently expose the bank's proprietary algorithms. Some gen AI applications operating in real time, such as ones used in customer service, require a mix of automated and human oversight to catch issues promptly.

Many financial institutions' data governance controls don't sufficiently address gen AI, which relies heavily on combining public and private data. This raises concerns about who is responsible for what data and how it's used. For example, when using gen AI coding assistants, questions and pieces of code from open integrated development environments can be included in the prompts and sent to external gen AI providers. But they might not be saved, and their influence on code recommendations could have legal implications.

Financial institutions should develop systems to track where data originates, how it's used, and whether it adheres to privacy regulations. Not linking credit decisions to their source data could result in regulatory fines, lawsuits, and even the loss of license for noncompliance. Companies need to keep records for AI-generated content, which can change based on what's entered.

Legal and ethical factors

Headlines abound about gen AI systems that have run afoul of regulations. Mostly that's because these models blur the lines between new content and existing content protected by IP laws. This creates confusion about who owns and licenses it. Additionally, when gen AI models are trained on sensitive data, such as customer information, more attention is required for privacy and compliance. These models need careful monitoring so that they don't expose confidential information or perpetuate biases.

Transparency and "explainability" (the ability to understand how an AI model works and why it makes specific decisions) are also crucial, as the outputs of gen AI systems can sometimes be difficult to trace back to their origins. Financial institutions must establish safeguards to manage these risks throughout the model life cycle to ensure compliance with changing regulations and ethical standards.

Use a scorecard to manage gen AI risk

As financial institutions systematically review customer exposure; financial impact; the complexity of gen AI models, technologies, and data; and the legal and ethical implications, they can use a risk scorecard to determine which elements of their gen AI governance require updates and how urgent the need is. Teams can use the scorecard to evaluate the risks for all gen AI use cases and applications across the company (exhibit).

The scale used (scores of 5, 3, and 1, with 1 meaning low risk) reflects the degree of customer exposure and the level of human expert oversight in the inner workings of the gen AI application. It also reflects the expected financial impact, stage of gen-AI-application development, and more. Across these categories, oversight by human experts—particularly for high-stakes applications—is still the most effective way to ensure that gen AI systems don't make critical errors.

The scorecard can also be helpful to procurement teams in financial institutions that purchase rather than build gen AI applications; they can use it to assess their potential exposure to third-party risk and their comfort with the data and modeling techniques used by sellers of gen AI applications. While some factors may not be totally transparent to buyers, procurement teams can use a mix of vendor due diligence, technical reviews of underlying models, and contractual safeguards to assign risk scores to third-party software and make more informed purchasing decisions.

Exhibit

Teams can use a scorecard to evaluate the risks for all gen AI use cases and applications across their company.

Risk for gen AI use cases and applications, score (1 = low)[1]

Customer exposure	Gen AI capabilities don't relate to customers (eg, gen AI tool that processes contracts)	Gen AI capabilities indirectly exposed to external customers (eg, gen AI application used internally to generate marketing content)	Gen AI capabilities exposed to external customers (eg, public-facing gen AI application)
Financial impact	Gen AI capabilities don't directly map to financial or operational impact	Gen AI capabilities may lead to small downside risk due to poor performance of model	Gen AI capabilities may lead to large downside risk due to poor performance of model
Model complexity	Off-the-shelf foundational model used without customization	Virtual agents built using off-the-shelf foundational models	New foundational models built or open-source foundational models retrained
Technology complexity	Gen AI applications used only as models, with no IT integration	Third-party foundational model operation tools used to build and maintain gen AI applications (eg, data platform)	Custom foundational model operation tools need to be built and maintained in gen-AI-application production (eg, tool with high degree of integration with IT)
Data complexity	Quality of training data is high, well documented, and verifiable	Quality of training data is reasonably high and well documented	Quality of training data can't be validated, quality of training data is poor, or data set includes sensitive information
Ethical risk	Gen AI data and applications have been extensively validated internally and externally	Gen AI data and applications have been extensively validated internally	Gen AI data and applications may include inherent biases or generate toxic or harmful content

[1]Scale reflects degree of customer exposure and level of human expert oversight of gen AI application.

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Introduce a mix of controls to govern gen AI risk

Using a risk scorecard can help financial institutions prioritize gen AI use cases based on the business need and risk/return profile of each case. Scorecards can also signal when problems arise. In both cases, the scorecard must also be supported by a risk management framework, or set of controls, for managing gen AI. Each type of control—business, procedural, manual, and automated—plays a critical role in ensuring the safe and efficient use of gen AI.

Business controls: Don't block; adjust

Financial institutions will need to design a structure that oversees gen AI risk without slowing down innovation. For example, an organization could use a centralized AI oversight committee in the early stages of adopting a chatbot or other gen AI application. Later, control could shift to a subcommittee or multiple committees. The point is to build in flexibility.

Companies will need to decide how risks fit into their operational models (whether centralized, federated, or decentralized) to better address new challenges posed by gen AI systems. Most financial institutions start with a centralized organizational model for gen AI risk and shift toward a partially centralized or fully decentralized model as their risk management capabilities mature. To move faster, some establish

gen AI accelerators to create consistent approaches across departments.

Procedural controls: Stay nimble
For procedures such as handling credit applications, most financial institutions should update their MRM standards. The standards should reflect gen-AI-specific risks, such as how models handle changing inputs and multistep interactions. For instance, if a bank simulates a wide range of customer responses to a virtual assistant, the MRM will need to continuously adapt. Similarly, technology review processes should be streamlined to safely integrate gen AI systems into operations. All updates should include methods for monitoring how gen AI applications adapt over time to ensure that they remain accurate and compliant as they process new prompts and new data.

Manual controls: Keep an eye on the machine
Human oversight is essential for checking sensitive outputs and ensuring the ethical use of gen AI. For example, reviewers need to redact sensitive data before models process it. When it comes to the quality of gen-AI-generated responses, financial institutions should create "golden lists" of questions for testing the models.

They should also solicit lots of feedback from customers and employees. Systems can learn from these human evaluations. The feedback can inform the accuracy and appropriateness of various outputs—for instance, how a virtual assistant "speaks" to a customer should align with institutional values and goals. The outputs should be reviewed regularly and updated as needed to bolster the models' learning capabilities.

Automated controls: Consider third-party tools
One of the benefits of technology is that it can, in some cases, manage itself. Automated tools can sanitize data at scale, flag unusual use, and start fixes in real time. For instance, many third-party applications can remove sensitive information from documents before processing. Other third-party tools can automate vulnerability testing for gen AI systems, which helps financial institutions quickly identify and address weaknesses. Gen AI models themselves can use a combination of traditional AI and newer technologies to check their own outputs—that is, models checking models—to ensure quality control at high speeds.

As gen AI becomes an even bigger part of financial institutions, risk leaders will need to rethink how they manage the related systems. They will need to move beyond traditional AI risk practices and include real-time monitoring, robust transparency, and stronger safeguards for data privacy and ethics. A comprehensive risk scorecard and a focus on four key sets of controls can help companies find the right balance between pursuing innovation and mitigating risk. More than that, taking a systematic approach to updating gen AI risk governance can help financial institutions unlock the transformative power of this new technology to improve decision-making, customer service, and operational efficiency—and do so responsibly.

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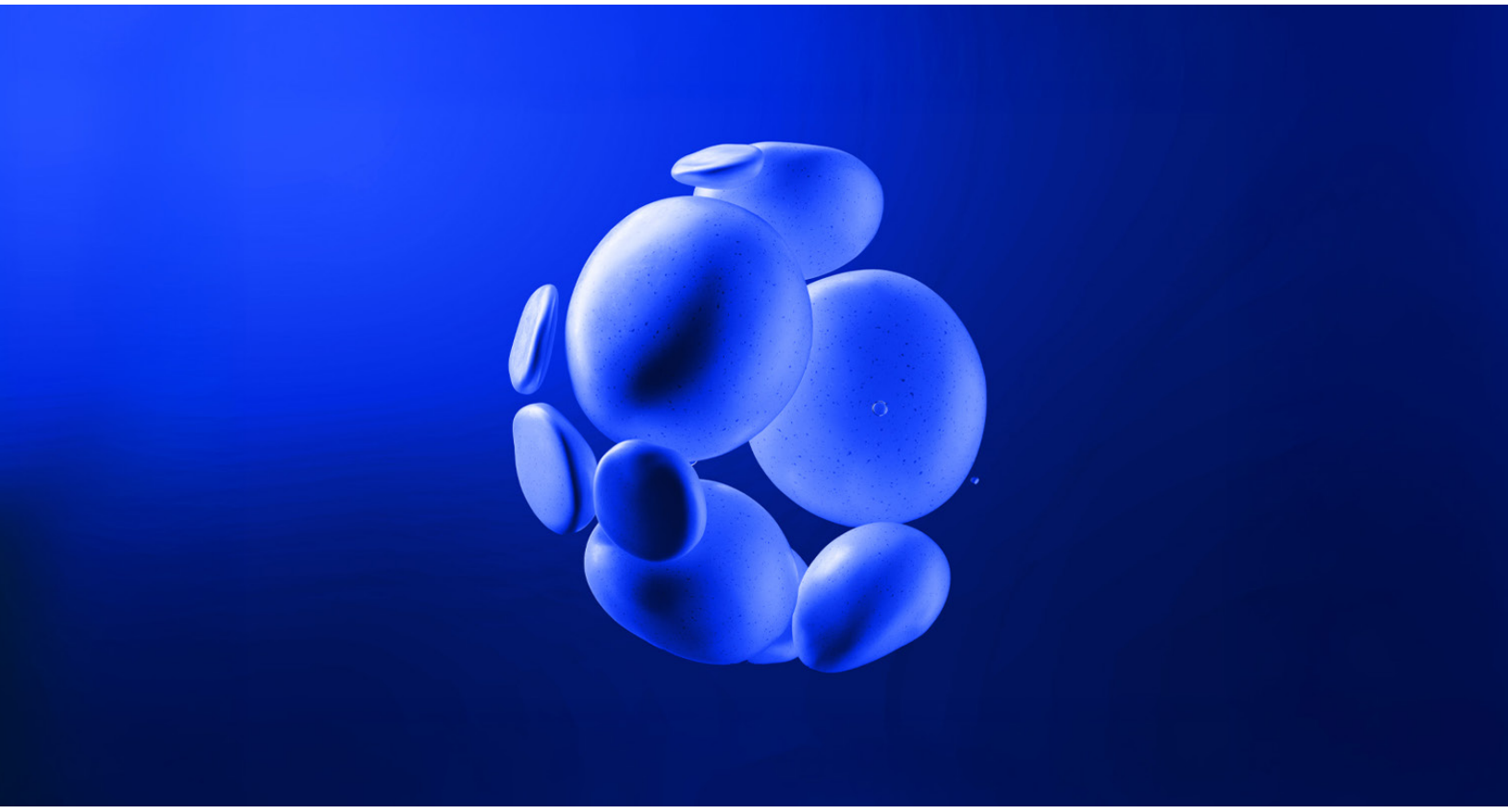
The authors wish to thank Matt Fitzpatrick for his contributions to this article.

This article was edited by David Weidner, a senior editor in the Bay Area office.

Governance, risk, and compliance: A new lens on best practices

Companies globally say they see room for improvement in governance, risk, and compliance (GRC), a new McKinsey survey shows. But a few are bucking the trend with smarter, more effective capabilities.

This article is a collaborative effort by Alfonso Natale, Anke Raufuss, Björn Nilsson, Irene Peschel, and Oliver Bevan, with Andreas Raggl, representing views from McKinsey's Risk & Resilience Practice.



Excellent governance, risk, and compliance (GRC) is a common aspiration, but how often is it a reality? For most companies, GRC is a work in progress, according to McKinsey's 2025 Global GRC Benchmarking Survey (see sidebar, "Our survey methodology"). Despite efforts to broaden expertise at senior levels, corporate leaders see a "need for improvement" across numerous aspects of all three GRC pillars.

There are many reasons for GRC shortfalls, some of which can be traced back to idiosyncratic factors in how businesses are run. Yet across industries, there are also some common pain points, including limited tech enablement, insufficient resourcing of oversight capabilities, and the challenges of a shifting regulatory landscape.

To understand the dynamics that shape GRC capabilities, we asked 193 corporate leaders to tell us how they structure their governance frameworks, manage risk, and comply with local and regional regulations. The survey responses offer compelling insights into levels of GRC maturity globally and highlight the strategies that some companies are using to build smarter, more effective capabilities.

Governance approaches vary widely

Most companies in our survey understand that dedicated governance frameworks are integral to efficient and effective operations. Fifty percent of respondents have chosen a strategic board archetype, with 72 percent adding between two and five subcommittees. This approach means the board can both take a hands-on approach to governance and draw on a wide range of expertise to manage critical aspects of operations. Indeed, 55 percent of respondents opt for a board with diverse expertise across industries and functions.

At many organizations, the ultimate approval authority for key decisions sits with the board and the CEO, meaning the board is involved in defining and approving matters including strategy (business planning, strategic KPIs, and targets), finance and capital, and risk management frameworks and policy (Exhibit 1). Moreover, a comprehensive board committee structure oversees critical aspects of operations and governance. Shareholders and wider management, meanwhile, play a more limited role.

Boards often delegate specialist responsibilities such as risk management and legal and compliance. In those two areas, 38 percent and 44 percent of respondents, respectively, assign responsibilities to wider management. The same thinking is reflected in reporting lines, with insights from our client work and benchmarking showing that risk and compliance functions at most nonfinancial institutions commonly report to the CFO or chief legal officer (CLO)/group counsel.

The delegation of risk and compliance feeds through to GRC maturity. It is no coincidence that almost half of institutions (44 percent) tell us that the head of risk is positioned more than one level below the CEO and that those companies, on average, report less mature risk functions. The general rule is that where the top risk professional has less seniority, the

Our survey methodology

McKinsey interviewed 193 decision-makers in Europe (40 percent), North America (37 percent), Asia–Pacific (14 percent) and other regions (9 percent). Forty percent of surveyed institutions were categorized as small, meaning they had annual revenues of $5 billion or less. Thirty-one percent were medium size (with revenues of $5 billion to $20 billion), and 29 percent were large (with revenues of more than $20 billion).

Respondents worked across a wide range of industries. Forty-one participants were employed by consumer companies, while 28 worked in global energy and materials. Similar numbers worked in transport, logistics, and infrastructure; advanced industries; technology, media, and telecommunications; and life sciences. More than 60 percent held roles at the C-suite level or C-suite minus one level, while about 40 percent were at C-suite minus two or lower.

maturity of the risk function is seen as lower. Stress testing, a well-defined risk appetite, and risk-based compensation are three key areas in which less mature organizations have fallen behind.

The same relationship between seniority and maturity is found in the governance of compliance activities, with almost half of institutions (47 percent) saying that the function is managed at two levels below the CEO or lower. Again, organizations with lower-ranked heads of compliance score themselves lower on maturity. A minority of compliance heads (38 percent) report to the general council or CLO. Still, 75 percent of respondents indicate that a chief compliance officer is responsible for groupwide compliance, while 80 percent say that person can escalate matters directly to the board.

A reliable foundation of good governance is documentation, and 93 percent of survey respondents say they have a framework or policy document in place. That said, many organizations report gaps in coverage. For example, about half of companies (48 percent) have no formal corporate governance procedures, 58 percent do not use manuals, and 53 percent do not keep inventories of board resolutions.

Similar metrics apply to board oversight of governance, with only about half of companies (53 percent) retaining documentation for annual board assessments. In many cases, there may be no assessments at board level, implying significant gaps in performance and change management capabilities.

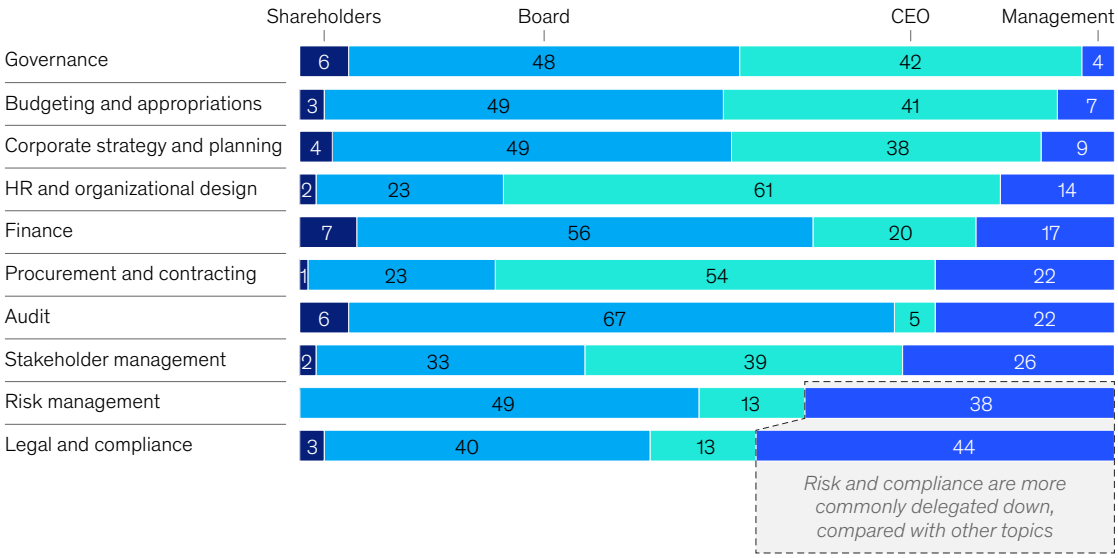
Risk management: Some industries are ahead of others

On risk management, we asked decision-makers to rate themselves on a range of capabilities necessary to navigate a complex global risk landscape. Across industries, the responses reveal that decision-

Exhibit 1

At most organizations, the board and management team have ultimate approval authority for key decisions.

Approval authority at respondents' organizations, by topic, % of respondents



Source: McKinsey Governance, Risk, and Compliance Survey, 193 participants, Oct–Dec 2024

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makers see room for improvement, as evidenced by an average score of 2.6 out of 4.0. The only industry to rate itself as "good" (with a score of 3.2) is insurance, suggesting that financial services may be ahead of other industries following past crises (for example, the 2007–08 financial crisis) and subsequent regulatory actions (Exhibit 2).[1]

Most industries tell us that they need to up their game in strategic risk management, encompassing areas such as risk appetite, stress testing, and board oversight. Sixty-seven percent of companies in life sciences, for example, say that a well-defined risk appetite is either absent, lagging, or in need of improvement, while 54 percent of companies in the travel, logistics, and infrastructure (TLI) sector apply the same three descriptors to their use of stress scenarios. Conversely, industry scores are highest in areas such as having a clear risk taxonomy and making capital allocation decisions (Exhibit 3).

Among other risk categories, five of the eight industries surveyed report challenges in operating a three-lines-of-defense model (with life sciences being the most prominent). Additionally, four in eight profess weakness in self-assessment of risk culture (with insurance, life sciences, and TLI scoring themselves below average).

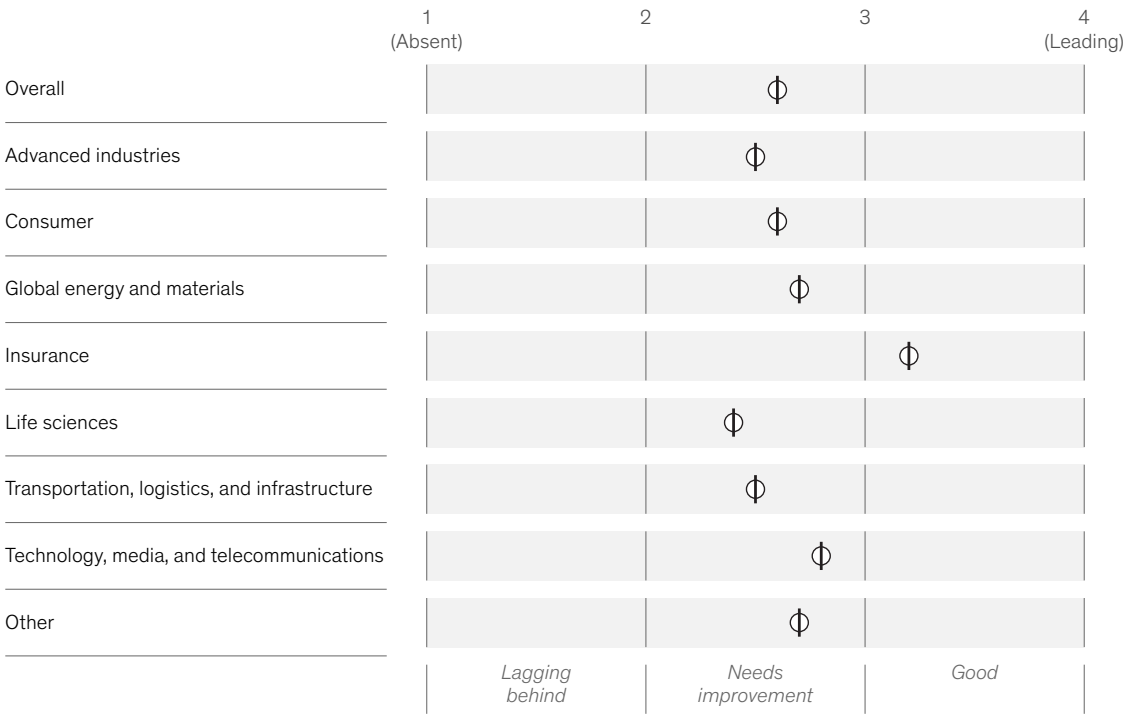
As companies grow, they don't only expand their GRC capabilities. They also learn how to continue that development over time. Larger companies in our

[1] The banking industry was not included in this year's survey.

Exhibit 2

Insurance is the only industry assessed that rates its risk maturity as 'good.'

Average risk assessment scores, by industry, scale of 1–4



Source: McKinsey Governance, Risk, and Compliance Survey, 193 participants, Oct–Dec 2024

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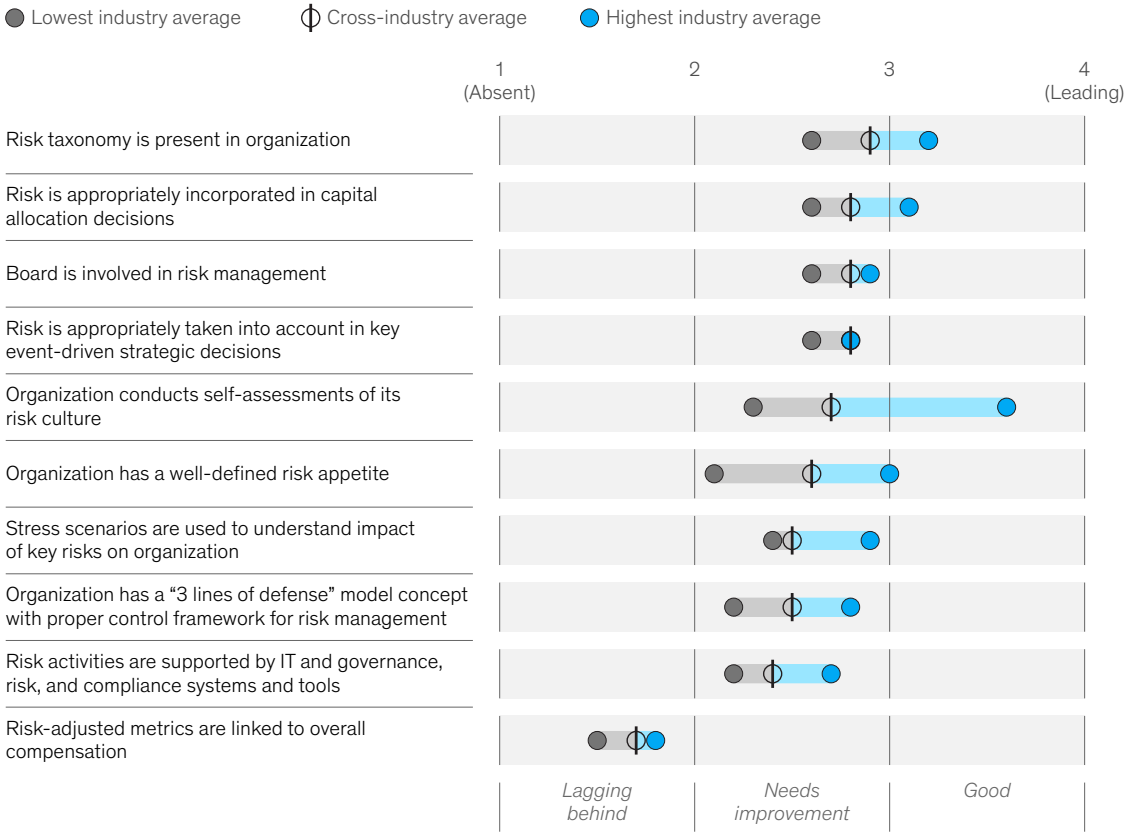
Exhibit 3

Cross-industry average risk assessment scores are highest for clear risk taxonomy and capital allocation decisions.

Average risk assessment scores,[1] scale of 1–4



[1]Excl insurance industry.
Source: McKinsey Governance, Risk, and Compliance Survey, 193 participants, Oct–Dec 2024

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survey generally report more mature risk management capabilities than medium-size or smaller companies.[2] Equally, medium-size companies generally rate themselves higher than smaller companies.

Compliance: Zeroing in on a moving target

Across industries, there is room for improvement in compliance management, revealed by an average score of 2.9 out of 4.0 in our survey. TLI and advanced industries report the lowest compliance maturity, while insurance sits at the top of the table with a score of 3.4, again reflecting the heightened regulatory and prudential environment in the financial industry. Global energy and materials and technology, media, and telecommunications (TMT) also rate themselves as "good," with scores of 3.0 or above.

Significant areas for improvement include risk-based approaches for compliance controls, systematic monitoring and reporting, sanctions management,

[2] Large companies are those with more than $20 billion in revenues, medium are those with $5 billion to $20 billion, and small are those with less than $5 billion.

and fulfillment of organizational and supervisory duties by executive management or the board, where advanced industries, consumer, life sciences, and TLI are laggards.

Companies are most confident in six key areas of compliance operations:

— the existence of compliance risk processes and the tailoring of compliance systems

— comprehensive compliance policies and procedures

— regular targeted training

— the existence of a culture of compliance communicated by senior leadership

— the provision of a whistleblowing channel, on which a notable 52 percent of respondents describe themselves as leading (Exhibit 4)

— ownership of effective remediation processes

Conversely, the dimension most often cited as a source of weakness is the extent to which ethics and compliance culture feeds through to leadership incentives and bonus structures. On that count, 68 percent of respondents describe their maturity level as absent, lagging, or in need of improvement.

Larger companies are more confident in their capabilities than their smaller peers. Across 11 compliance metrics, these companies score themselves higher than the industry average on nine metrics. The two metrics on which they underperform are leadership communication of a culture of compliance and whistleblowing.

Observations across GRC

A common pain point highlighted by our survey is that companies are generally failing to use basic GRC tools and systems as effectively as they would like to. For example, in the risk function, 42 percent of respondents across industries say their use of IT and GRC systems "needs improvement." Fifteen percent say it is absent or lagging.

While most institutions operate distributed centralized and decentralized resources, with a one-to-one to one-to-two ratio (56 percent in risk), overall resourcing of GRC functions is quite small in absolute terms. In risk management, 66 percent of respondents have 20 or fewer full-time equivalents (FTEs) in total. Similarly, in compliance, 62 percent of companies say their teams employ fewer than 20 FTEs. These relatively sparse resources are notable, even though our survey is focused generally on large organizations.

Companies rarely tie compensation systems (incentives and bonus structures) to risk- or compliance-related performance metrics. Admittedly, there may be some cases in our survey where respondents do not have access to relevant information at senior levels, but a reasonable supposition is that companies are generally yet to implement GRC-related compensation metrics.

Five imperatives for reaching GRC excellence

Leading GRC companies rarely achieve rock-steady capabilities through piecemeal or periodic initiatives. Instead, they rigorously seek out approaches to support excellent decision-making, unlock value creation opportunities, and comply with relevant regulations in their spheres of operations. Here we set out five features that can be a driver of GRC excellence.

Focus on tone from the top and revisit your GRC mandate

The positioning and mandate of the GRC function, and specifically the risk and compliance management functions, are often an indication of maturity level. Where senior decision-makers are less involved, or do not provide an adequate mandate (for example, in the form of a chief risk officer [CRO] or group compliance officer [GCO]), functional maturity tends to be lower. In nonfinancial industries, it is less common for companies to have a C-level mandate for roles such as CROs and GCOs—and the absence of a "seat at the table" feeds through to GRC performance. Thus, establishing appropriate C-level representation and mandates should be a priority for organizations.

The underlying principle is that it is vital to have an adequate "voice of risk" at the executive level. In some instances, this may come through a dedicated

Exhibit 4

Cross-industry average compliance assessment scores are highest for end-to-end whistleblowing channels.

Average compliance assessment scores,[1] scale of 1–4

[1]Excl insurance industry.
Source: McKinsey Governance, Risk, and Compliance Survey, 193 participants, Oct–Dec 2024

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CRO or CCO. In others, the CFO or COO may take a lead (with a dedicated CRO reporting to them with direct access to the board). In addition, interactions at the peer level tend to ease engagement and boost the quality of interactions, particularly in key decision-making bodies such as executive committees, where GRC can better contribute if adequately represented.

Adopt a strategic lens, particularly in risk management

Day-to-day management and oversight of GRC functions (managing risks in operations, ensuring adherence to compliance rules and regulations, and following policies of corporate governance) are essential to conducting business in a safe and sound way. But many institutions struggle to complement day-to-day activities with a strategic perspective—for example, failing to apply a top-down approach to risk management through a board-level view of risk appetite and capacity. Forward-looking companies not only do this but embrace activities such as horizon scanning, scenario-based analysis, and stress testing to support their processes. And they train their "foresight muscles" through close alignment between the risk function and the board, underpinned by industry benchmarking and market expertise.

Our survey shows that most risk management functions are engaged with addressing essential building blocks—indicating that areas such as risk appetite, scenario and stress testing, and involvement in strategic decisioning are "in need of development." But the addition of a more forward-looking, top-down perspective on risks (particularly those not yet manifested in day-to-day operations) to what is seen daily and reported to supervisors (often in a backward-looking manner) will create a more holistic perspective. Thus, it is vital to work on both elements in a balanced way. This will boost the contribution of GRC when it comes to strategic decisioning and long-term planning. In our recent experience, climate change and geopolitical developments have led to more investment in scenario and stress testing.

Fix the fundamentals first

Given that the overarching sentiment across GRC is that companies "need improvement," leaders should consider whether a more transformative approach is required. This would imply drafting a clearly defined road map, implementing focused performance management and change management, and developing capabilities to objectively measure the GRC function's contribution to tangible value creation over time. For example, has the risk function helped to make a better decision of strategic relevance (for example, safeguarding the value of an acquisition and delivering a major investment project within the specified scope/time and risk envelope), while also presenting evidence that day-to-day risk management leads to sound and resilient operations? We often find that major incidents or scandals trigger a transformative approach. However, forward-looking companies embark on the journey without a trigger.

Embrace technology to complement human expertise at scale

Many companies say they "need to develop" IT and GRC systems to support their GRC activities, but the imperative is to do so. Many GRC vendors would confirm that their client base is using only a fraction of available features and functionalities, and many companies have yet to establish appropriate systems and tools, according to our survey. It is even more important to double down on technology support, which would include embracing AI and harnessing organizational and third-party data available to all organizations.

On smart AI-based tools and agents, many businesses are in a transition phase, but we are confident that in due course there will be numerous applications in GRC. One example would be a gen AI–based policy agent to advise procurement officers on whether sanction policy rules apply to a current supplier, or to inform them of changes in policies. Use cases are already being piloted and will mature over time. Automated and risk-based control testing, as well as smarter and more interactive training on compliance and risk management, offer other avenues where intelligent technology will overcome the limited availability of human resources. Indeed, we are convinced that only a combination of human expertise and smart technologies in GRC will enable companies to tackle the increasingly demanding regulatory and risk environment.

Review incentives and bonus structures to reflect risk and compliance priorities

While companies must prioritize a strong risk and compliance culture, human resources teams and board remuneration committees could help

Many companies say they 'need to develop' IT and GRC systems to support their GRC activities, but the imperative is to do so.

companies improve their oversight by expressly embedding targets into leadership compensation packages. The aim should be to offer incentives for balanced risk/return behaviors, with compensation directly tied to the success of risk-based approaches across the organization. This will also drive consideration of GRC matters at senior levels and in strategic decision-making. We have found this approach to be most effective when complemented with a learning culture—one where learning from mistakes is embraced to continuously improve the company's business operations and risk management. The mining and airline industries are leading proponents of this.

In a challenging, volatile, and often disruptive environment, there is more pressure than ever on corporate decision-makers to get a strong grip on governance, risk, and compliance. McKinsey's flagship GRC survey shows that companies are making progress across numerous dimensions but that there is still work to do. Many companies are now addressing their weaknesses and building GRC organizations that combine both strategic oversight and excellent daily operations. The capabilities they create will serve them well on the uncertain road ahead.

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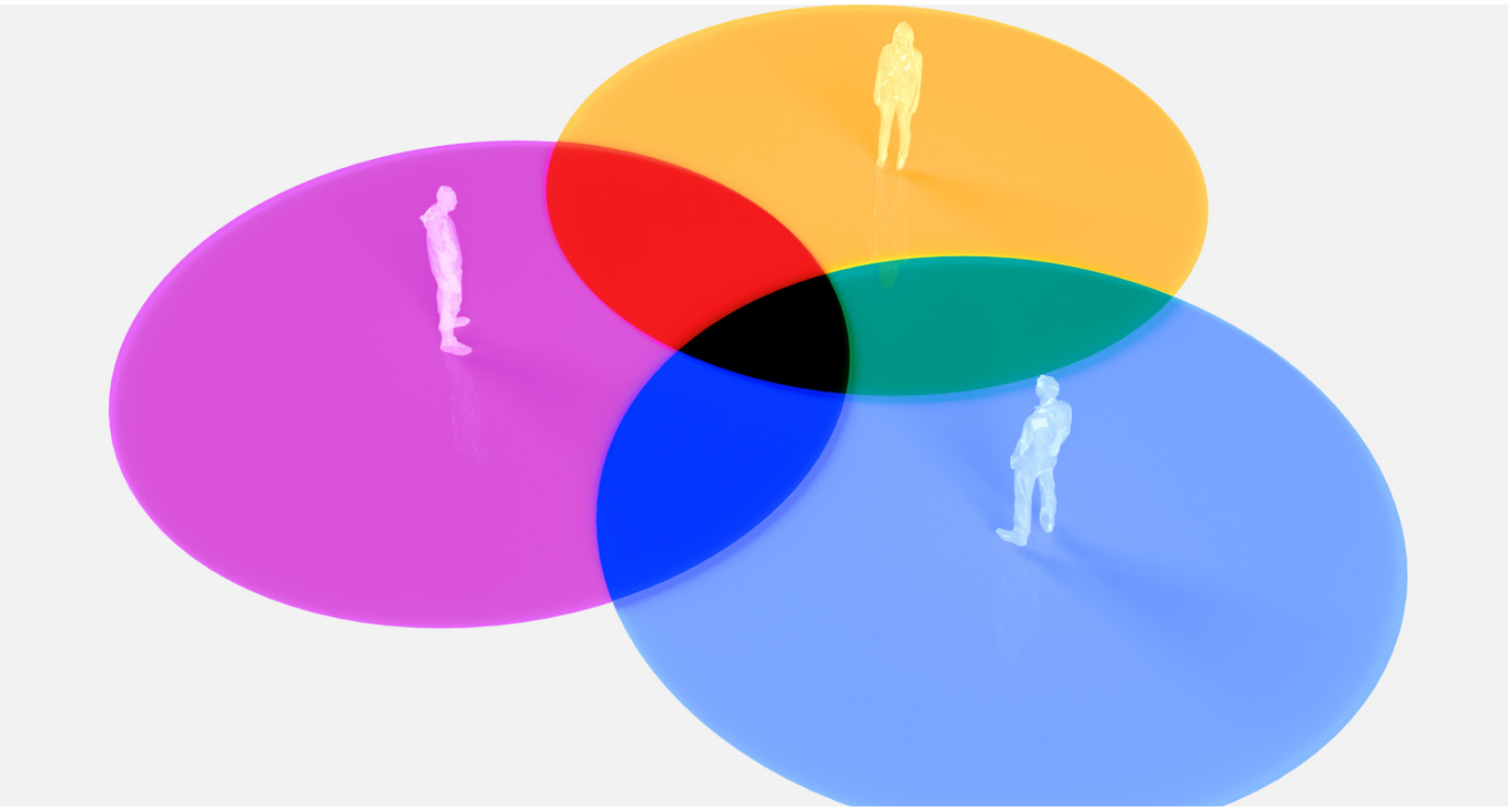
The authors wish to thank Alice Kotlicka, Buket Bastuerk, Dilara Cagatay-Ezgu, Gennadiy Babenko, Ghalia Baki, Mridu Singh, Pankaj Narang, Raashee Babbar, Raisa Wachter, Silvia Tilea, and Steve Saxon for their contributions to this article.

Which chief risk officer archetype are you?

There's no one-size-fits-all approach to managing risk and resilience. Chief risk officers can benefit from examining their innate operating models—and understanding when they need to change.

by Cristina Catania, Ida Kristensen, and Marc Chiapolino with Tijana Trkulja



Today's chief risk officers (CROs) sit at the forefront of enterprise-wide decision-making and long-term strategy setting. They work closely with CEOs and other senior executives to navigate disruptions and risks inherent to the business while also ensuring that they maintain the independence that enables prudent guidance.

To better understand the evolving role of the CRO, we conducted in-depth interviews with more than 30 current and former CROs of major financial institutions from across the globe. In a previous article, we laid out the six habits that make CROs successful: being explicit about their risk and resilience purpose, creating the next generation of risk leaders, leading beyond risk, treating supervisors as partners, focusing on what only they can do, and monitoring their personal effectiveness.[1] In this article, we build on this to examine the ways that top CROs develop different objectives, mindsets, and operating models based on both internal preferences and external conditions.

In the course of our research, one thing became clear: There's no one-size-fits-all approach to achieving CRO excellence. Successful CROs exhibit the six habits previously referenced, but they still differ in how they emphasize various facets of their roles to meet distinct moments. With organizations facing a hyperconnected, geopolitically fraught, tech-forward world, there's simply too much volatility to pave a linear pathway to success.

Through our study, we have identified three common CRO archetypes that describe different combinations of objectives and mindsets and the resulting operating models. CROs' intrinsic preferences, as well as extrinsic factors such as changing company strategies, global crises, evolving market dynamics, regulatory changes, and shifting trade policies, can influence their archetypes and may cause them to shift, at least temporarily, from one archetype to another. Examining these archetypes can help CROs better understand their innate inclinations—and help them identify conditions under which they could benefit from altering their archetype to deal with shifting circumstances.

Three CRO archetypes

Based on the interviews, we labeled the three CRO archetypes as the "architect," the "protector," and the "business accelerator." Each risk leader typically gravitates toward one of these archetypes, in many cases influenced by their previous work experience. But as a CRO's organization matures over time or disruption necessitates change, shifting to another archetype can be advantageous.

The architect

CROs who intrinsically gravitate toward the architect archetype are motivated by a desire to leave the risk function better for the next generation. They especially value building and institutionalizing world-class capabilities and risk culture and setting high standards for risk management. They focus on creating strong risk foundations and investing in long-term capabilities to support the resiliency and efficiency of their organizations.

Architect CROs devote much effort to supporting their teams through leadership development, mentorship, and training—preparing younger leaders to step into bigger, broader roles. Craig Broderick, former CRO of Goldman Sachs, said, "As you become more strategic and less tactical with time, not only do you rely more on your colleagues for day-to-day work, but you spend more time partnering with them and mutually growing. One of the most important functions of any senior leader is that they create depth of people in the organization who are capable of taking over."

External circumstances (such as a major regulatory change) can push CROs of all types to put on their architect hats. In such situations, those who do so successfully first consider the future sustainability of the decisions and design choices that they make. "I always think about the management team ten or twenty years from now," shared Marlene Debel, MetLife's CRO and head of MetLife Insurance Investments. "I hope they will look back and say, 'I'm really glad they made that decision.' In a business like ours, you live with your decisions for a long time."

For CROs who gravitate toward the architect archetype, it's important to remain mindful of

[1] Ida Kristensen, Marc Chiapolino, María del Mar Martínez, and Ritesh Jain, "The six habits of highly successful chief risk officers," McKinsey, December 13, 2024.

the need to be nimble in some contexts and to appropriately and pragmatically react to fast-moving events. They need to recognize that perfect can be the enemy of good when time is of the essence.

The protector

CROs who gravitate toward the protector archetype are motivated by creating highly responsive risk organizations that can handle whatever is thrown at them. Don Truslow, former CRO of Wachovia, told us, "You get pulled into everything. Stick to your guns. Recognize your role. Do what you can to help, whether that's pleasant things or unpleasant things. There are a lot of things that are outside your control, and you get anxious because you can't control them, but you do your best. And just remember that one day, the sun will come up."

Protector CROs tend to focus on the most pressing issues at hand, whether they are managing day-to-day risk or implementing broader "change the bank" priorities. They make decisions quickly and confidently—even during a crisis.

Protector CROs often come from risk-related backgrounds that have taught them to mobilize swiftly and act with conviction. But every CRO will at some point during their career need to play protector. "It's a decision-making role; you're not just an adviser," said Brian Leach, the former top risk executive at Citigroup who is credited with helping stabilize the organization in the wake of the 2008 financial crisis. "The ability to handle a crisis is the lifeblood of a CRO."

One potential pitfall for CROs who gravitate toward the protector archetype is that they may lead with so much intensity that they risk overtaxing their teams and creating burnout. They should pay attention to the health of their teams and make sure that they build long-term, sustainable capabilities in the risk function rather than become overly reliant on short-term fixes.

The business accelerator

CROs who gravitate toward the business accelerator archetype are motivated by maximizing business growth and profitability while remaining vigilant about risk. Through informed, calculated, and proactive risk management, they enable their organizations to reach business goals efficiently and effectively. Lorie Rupp, CRO of First Citizens Bank, noted that she tries to create an even balance between risk management and strategic planning: "My job is about the rules and regulations and industry practices, but if I don't support the business strategy, I am of no use to the company. My value becomes pretty unbalanced."

These CROs put significant effort into engaging with their executive teams to understand their businesses' strategic objectives. They develop strong, trust-based partnerships with their business counterparts to aid collaboration and joint decision-making. Alexandra Boleslawski, CRO of Crédit Agricole Group, reflected on how important it is for a CRO to internalize the business strategy: "We are completely part of the decision-making process, and we are sitting at the committee that gives the go. And to be able to provide your opinion, you need to understand the strategy. Of course, you will look at the risk on a stand-alone basis, but you also need to look at the risk in the global picture and whether this is consistent with the overall strategy."

It's no surprise that business accelerator CROs often come from a strong business background. They value having a say in steering their companies' strategic directions and allocating capital commensurately. When it comes time to challenge the CEO, as every CRO will occasionally need to do if circumstances warrant, "EQ trumps IQ," said Trevor Adams, former CRO of Nedbank. "It comes back to relationships. A good relationship means you can be open and feel safe in conversation and not be threatened when you raise something or disagree."

CROs who gravitate toward the business accelerator archetype should be careful, as they prioritize business goals, to stay ahead of (not just respond to) regulatory developments. They should also make sure that they sufficiently invest in longer-term needs of risk management infrastructure. While leading beyond risk is important, an organization without a robust risk management function can be especially vulnerable to the next crisis that comes its way.

How each CRO archetype budgets time

Our research indicates that architect, protector, and business accelerator CROs spend their time differently across four important areas (exhibit). Architect CROs split their time across the four areas more evenly than do other archetypes. Protector CROs tend to allocate comparatively much more time to day-to-day risk management. Business accelerator CROs allocate comparatively more time to engaging with their executive teams and boards. To assess their operating models, CROs can ask themselves several questions: Am I allocating time in ways that will help me achieve my top priorities? Where am I spending too much time? What adjustments might be needed for success?

Our analysis suggests that no archetypical approach is inherently more effective than another. All three have benefits and can be highly effective at different moments in an organization's journey. While every CRO may naturally lean toward a particular archetype—guided by strengths, personality, and experiences—being self-aware of their inclinations and alert to when circumstances require a shift will help them navigate the course of their careers. Our hope is that by understanding these archetypes, CROs can develop a better understanding of how they lead themselves and align their strategies with long-term organizational needs.

Which CRO archetype are you?

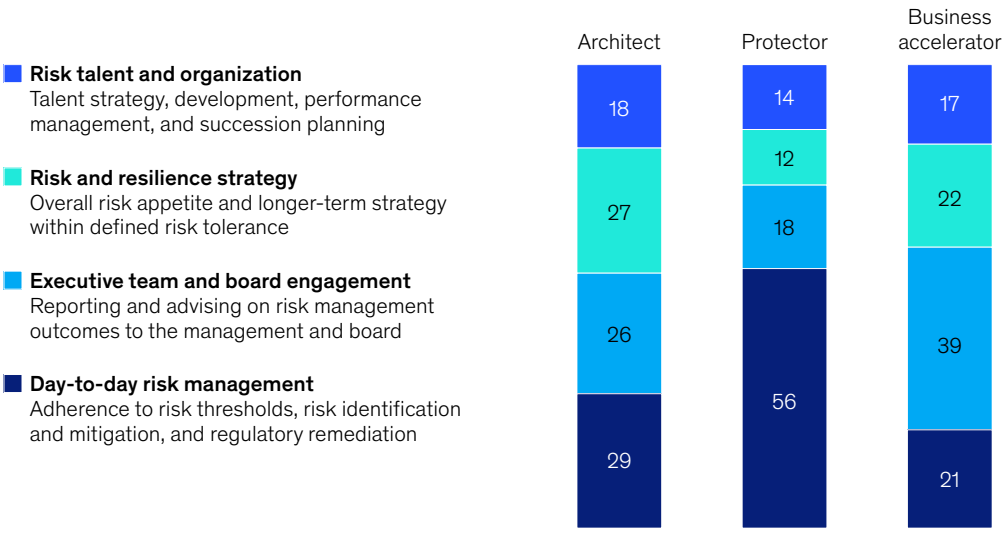
Successful CROs often reflect on their leadership objectives, mindsets, and operating models. To understand which archetype they naturally gravitate toward, CROs can consider and answer several questions.

— **1. When you retire from your time as a CRO, which compliment would make you the proudest?**

Exhibit

Chief risk officer archetypes allocate their time differently.

Average weekly time allocation, by chief risk officer (CRO) archetype, % of time



Note: Figures may not sum to 100%, because of rounding.
Source: CRO excellence executive interviews, Mar–July 2024 (n = 17)

- A - "You made a lasting difference in building the risk organization and developing next-generation risk capabilities."
- B - "You successfully led the organization through a crisis and helped it emerge stronger on the other side."
- C - "You helped improve the bottom line and drive strategic business outcomes."

— **2. When adding talent to the risk organization, which characteristic should be a tiebreaker for two otherwise similar candidates?**

- A - deeper and more distinctive risk expertise
- B - stronger track record of great decision-making under pressure
- C - more developed business knowledge and a more proven ability to collaborate effectively with the business

— **3. When in a crisis, how do you prefer to make decisions?**

- A - following detailed crisis preparedness playbooks
- B - making quick decisions on the fly, demonstrating your comfort with uncertainty
- C - syndicating different options and your recommendation fully before making a decision

— **4. How do you prefer to interact with the rest of the executive team?**

- A - in existing risk forums and committees, using a standard set of predefined reports and scheduled updates
- B - via ad hoc discussions to escalate items or make quick decisions in a manner commensurate with circumstances
- C - through participation in business committees that extend beyond risk issues—especially when called on by colleagues for input on business decisions

— **5. If you had two extra hours on your calendar, how would you use them?**

- A - obtaining external perspectives (for instance, about long-term geopolitical shifts or implications of technology trends)
- B - dealing with high-priority risk matters
- C - spending time with colleagues outside the risk function on the company's broader strategic priorities

If you answered mostly As, you naturally gravitate toward the *architect* CRO archetype.

Architect CROs focus on establishing a robust risk foundation and are naturally gifted at building a long-term risk strategy. They should be cognizant of the need to move faster when faced with an impending crisis and changing business needs.

If you answered mostly Bs, you naturally gravitate toward the *protector* CRO archetype.

Protector CROs excel at navigating daily risks. They rise to the moment with ease to resolve specific crises. But they should take care, while keeping an eye on short-term challenges, to watch out for potential burnout in the organization and to spend time building sustainable and resilient risk capabilities.

If you answered mostly Cs, you naturally gravitate toward the *business accelerator* CRO archetype.

Business accelerator CROs are dedicated to partnering with business leaders, leveraging risk management to fuel organizational strategic priorities. While engaged in maximizing business goals, they should remember to also invest in longer-term needs of risk management infrastructure and to stay ahead of regulatory developments.

Embracing the CRO archetype journey

CRO excellence requires continuous recalibration and adaptation, and successful CROs can transition to a different archetype when the moment demands it. A range of internal and external factors—including strategic changes, competitive dynamics, regulatory developments, and unforeseen external events—can catalyze shifts from one archetype to another. It can be helpful to consider the following questions to identify whether any of these situations are occurring:

— *Is the company experiencing a change in the regulatory regime that requires the risk function to be adjusted or modernized for the future?* This is often a moment to embody the architect CRO archetype and focus on implementing foundational risk management, establishing frameworks, and cultivating risk talent and culture.

— *Has the company been thrust into a crisis situation, or are there warning signs of a crisis on the horizon?* These are moments to serve as a protector CRO to stabilize the company, manage urgent threats, and safeguard assets.

— *Does the organization need its risk function to help enable strategic pivots?* This could be the time to act as a business accelerator CRO, becoming involved in steering the company's strategic direction and optimizing capital allocation in ways that encourage growth.

Frequent reflection on such questions can help ensure that a CRO doesn't wait too long to shift among archetypes when a change is needed. "A truly successful CRO will likely evolve from one archetype to another over the course of their tenure," said Mark Hughes, former CRO of the Royal Bank of Canada, "and will certainly need the ability to move deftly between archetypes, depending on the situation."

Nigel Williams, former group CRO of Commonwealth Bank of Australia, made a shift from architect to business accelerator CRO. "I'd say that earlier in my career, it was about, 'How do we fix data, and how do we solve problems around risk issues like data accuracy and consistency?'" he said. "Today, it's about, 'How do we get real value out of the data assets that we have?'" Evolving technological capabilities catalyzed a shift in Williams's focus from an emphasis on tactically solving data-related risk issues to leveraging data for the business's benefit.

After he overcame some challenges at his organization, Shaun Dooley, group CRO of National Australia Bank, found that calmer circumstances allowed him to shift his perspective from protector to architect CRO, focusing more on long-term planning. "I moved toward thinking, 'What's the future risk profile?' I pushed myself into the future a lot more, doing a lot of studying."

Each CRO archetype embodies a specific operating model that allocates time across various areas and stakeholders based on objectives and mindsets. External events and internal strategic changes can require CROs to shift from one archetype to another. Effective CROs use their networks to keep a pulse on the magnitude and velocity of changes, allowing them to act quickly when circumstances warrant. The best CROs are versatile and well-rounded leaders who are self-aware about their go-to archetype's benefits and limitations and who exhibit the ability to seamlessly shift operating models among all three archetypes when needed.

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The authors wish to thank Catherine Hartley, Debra Goodson, Eric Sherman, and Samantha Noronha for their contributions to this article.

This article was edited by Seth Stevenson, a senior editor in the New York office.

From crisis management to strategic resilience: Lessons from the auto industry

When strategic resilience is embedded in risk management, disruption can become a means for growth.

by Dorothee Herring, Manuel Altmeier, and Thomas Poppensieker

The global automotive industry is at a crossroads. Traditional risk management strategies aren't enough in an era of rapid technological advancements, geopolitical tensions, and supply chain upheavals. Carmakers saw abrupt changes in consumer demand during and after the COVID-19 pandemic and continue to grapple with persistent supply chain bottlenecks and transformative technological trends like electrification and autonomous driving. Geopolitics, with its trade barriers and potential to limit companies' access to critical materials, is making things even tougher. For automakers, the stakes couldn't be higher. It's time to rethink the road map.

Industry players will need to make substantial capital investments even as they face higher risks. Spending on electric vehicle (EV) batteries alone is expected to rise by 27 percent annually, reaching $400 billion by 2030. Similarly, the development of autonomous-driving technology will demand significant investment. Meanwhile, shifts in demand mean the value chain will need to evolve from a more resilient supply chain and sourcing strategy toward a more flexible and trade-resilient production and distribution network—all tied to long-term capital commitments. How quickly these changes are materializing is evident in China's vehicle exports, which, according to data from the China Association of Automobile Manufacturers, were five times higher last year compared with 2020, while exports from the United States and Japan fell.[1] Brand perceptions are changing, too, as evidenced by the declining demand for foreign cars in China.[2]

These challenges have forced industry leaders to rethink their strategies and ask difficult questions: How can we be better prepared for future uncertainties and anticipate disruptions earlier? More important, how do we adjust our approach to reducing risks while staying competitive?

To address these questions, business leaders should adopt an assertive, agile, and strategic approach to risk management, with scenario plans for a wide range of disruptions. Forward-thinking automakers are embedding resilience into every aspect of their business strategy, from investments to supply chain planning. In doing so, they are paving the way toward growth (see sidebar "Perspectives on the importance of resilience in the automotive industry"). They are also providing comfort to their boards by ensuring that their strategic risk profiles are well articulated, well understood, and commensurate with the company's capabilities and resources. In this article, we explain what they're doing and how others can start doing the same.

Embedding resilience into strategic planning

Embedding resilience within strategic planning means understanding where and how uncertainties evolve, across which dimensions or areas a company can strengthen its resilience, and then dynamically linking the two in an agile strategic-planning approach.

Identify the broad, long-term trends that often produce short-term disruptions

Disruptions are hard to predict, but business leaders can identify the areas from which they are likely to emerge. The World Economic Forum's 2024 risk report[3] highlights trends in technology, the environment, geopolitics, and socioeconomics that can lead to risks. In our view, the automotive industry faces 25 to 30 core strategic risks in these areas. Leaders can assess each of these risks for its impact, likelihood, and ways to limit the fallout. For instance, geopolitical risks affect market access, supply chains, and long-term production stability. Government policies can also affect access to technology, which is part of the growing trend of political protectionism and bargaining. Other risks include demographic shifts, energy transition policies, and changes in economic growth that influence demand for cars and EVs.

Mapping how these strategic risks could affect the organization's strategy can help leaders focus on the most urgent scenarios or those tied to critical

[1] Makiko Yamazaki, "Japan's exports fall for first time in 10 months on China, US slowdown," Reuters, October 16, 2024.
[2] Hanna Ziady, "The 'glory days' for global automakers in China are over," CNN, September 3, 2024.
[3] *Global Risks Report 2024*, World Economic Forum, January 10, 2024.

Perspectives on the importance of resilience in the automotive industry

Risk leaders at Volkswagen Group and Porsche Group explain how resilience can help automakers turn disruption into opportunity.

Resilience has become the watchword for automakers facing a range of disruptions—some technological, some involving changing customer expectations, and others associated with shifting global dynamics. Here, Volkswagen Group risk leader Torben Oeder and Porsche Group risk leader Steffen Spreiter explain why resilience and risk management must go hand in hand and how both can help shape the future of the mobility industry.

Questions for Torben Oeder:

How important is resilience in the automotive industry?

"It's critical for staying competitive. Disruptive changes like AI, autonomous driving, and the shift to electric vehicles mean we must prepare for uncertainties and turn them into opportunities."

What effect can autonomous driving have on an organization's resilience?

"It can change the future of mobility, but it comes with risks. Failures in AI, like missing obstacles, or delays in regulations could hurt customer trust. Ensuring safety and reliability while pushing innovation is key to gaining consumer confidence and staying competitive."

What's the link between resilience and competitive advantage?

"Rising geopolitical tensions and trade barriers force us to rethink and make supply chains more flexible. On top of finding alternatives for materials and production, we also risk losing the cost advantages of large-scale operations. Striking the right balance between building local resilience and keeping scale efficiency is key to staying competitive."

What capabilities do automakers need to build resilience?

"Resilience management must become an explicit aspect of strategy decisions, and corresponding skills for systematic analysis—monitoring and decision support, for example, through scenario analyses—become necessary. At the same time, there must be a much closer exchange between the risk, strategy, and finance teams."

Questions for Steffen Spreiter:

What's involved in the strategic risk decision-making process?

"On the one hand, it is very important that the departments and people involved carry out analyses and measures openly and without bias. Of course, those responsible can get the impression that they haven't done the right thing or done enough. This can lead to defensiveness and rejection. On the other hand, decisions have to be made at the right time. Experience has shown that since these are fundamental and far-reaching decisions, they may run the risk of their timelines being extended."

How should leaders think about capability building in risk functions?

"It is important that risk management, which has traditionally focused on operational processes, evolves further toward strategic risk management to address the relevant risk issues at the senior management level. This requires new skills in risk areas, from strategically thinking employees who can constructively participate in strategy projects and bring in planning processes right through to new analytical tool sets for strategic risk analysis and monitoring."

strategic decisions. Typically, this analysis should highlight three to four high-priority scenarios each quarter to guide strategic decisions around major investments or changes to existing plans. Forward-thinking automakers, for example, monitor geopolitical developments, such as trade restrictions or tariffs, and establish relevant markers designating when to adjust production so they can access markets and maintain supply chains. They also explore flexible production models to adapt to shifting demand. This is a break from the past when automakers planned sales volume and priced cars according to available production capacity.

Define the company's highest-priority resilience dimensions

Specific risks do not affect just one aspect of an automaker's operations. For example, trade restrictions don't just challenge companies to think differently about production networks; such restrictions force a broader strategic response, touching everything from finances to operations to reputation management.

Most organizations view resilience through six main categories: *financial, operational, digital/technological, organizational, business,* and *reputational*. Each has its own subset of risk dimensions ranging from operational stability to strategic competitiveness. For instance, if leaders are considering the operational resilience of their supply chains, the focus might be on keeping specific parts and components flowing. But strategically, they will also need to consider how to design supply chains that can adapt to today's volatile environment—be it geopolitical tensions, trade restrictions, conflicts, or climate-related disasters. In the past, the focus may have been on minimizing supply chain costs in a global free-trade environment. Today, the focus for supply chain leaders must be on planning for flexibility, additional redundancies (backup resources), and strategic sourcing options for rare materials, components, and technology. Each dimension of resilience offers short- and long-term opportunities for targeted improvements and greater organizational preparedness (Exhibit 1).

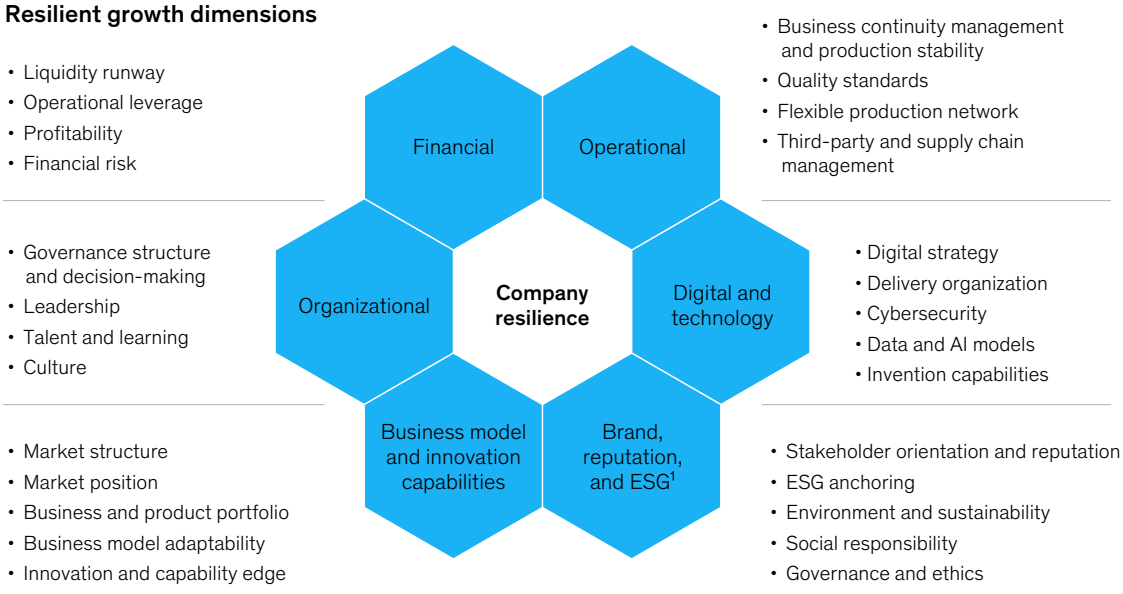
Through systematic reviews of these resilience dimensions, senior leaders can spot potential opportunities and vulnerabilities. One example in the automotive industry involves the rapid evolution of the software being developed for cars. In this case, two cultures are coming together—the more iterative and error-tolerant software engineering culture and the safety-oriented engineering culture associated with traditional car manufacturing. Given the constant upgrades to automotive technologies, carmakers will need to understand how to combine and integrate new technological skill sets and business models into their organizations—factors that managers often underestimate—and balance them against the economic reputational risks associated with potential technology failures.

Link uncertainties to structural resilience factors to further define priorities

Investing in resilience is costly, so prioritizing these investments is essential. Leaders will need to align their resilience initiatives with current and emerging risks. In this way, they can shape their quarterly

Exhibit 1

Each dimension of this resilience framework offers opportunities for targeted improvements and greater organizational preparedness.



[1]Environmental, social, and governance.

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agendas to include discussions about strategy and portfolio risks.

Consider the regulation of new technologies: For carmakers, managing new regulations and legal precedents on product liability will be critical for realizing advances in autonomous driving and AI. Automakers should weigh the potential benefits of being first movers against the potential legal and reputational risks of early adoption. Similarly, changes to environmental laws will influence the energy transition and its pace. Companies can take three actions to effectively link these and other uncertainties with structural resilience factors.

First, they could imagine the future, going beyond basic sensitivity analyses to consider a wider range of realistic possibilities. These may include low-probability but high-impact events, such as bans on combustion engines. By monitoring regulatory changes, consumer trends, and geopolitical developments, leaders can more easily identify when a scenario is becoming more likely and generate more informed responses more quickly.

Second, automakers could evaluate potential opportunities in these scenarios, applying the following tests to guide their preparedness:

— *Minimum preparedness.* Is the scenario realistic enough that it will be hard to argue afterward that the company did not prepare to a minimum level? Are there low-cost investments that make sense based on the minimum probability of occurrence?

— *Derisking strategy.* Is there a way to invest that focuses on reducing risk, even if it doesn't maximize profit? For instance, is it better to partner with a technology company or others in the auto industry rather than build a technology end to end alone—even if it means sharing profits or reducing product distinctiveness?

— *Time value.* Can decisions be delayed at minimal cost to maintain risk safeguards or investment opportunities?

— *Competitive view.* How do our choices compare with those of our competitors, and can we justify our approach? Are we in a class of one with our decisions?

Forward-thinking automakers, for example, benchmark their risk exposure using KPIs across impact and likelihood categories. Supply chain risks might be assessed by country exposure (both direct and indirect, including tier-one and tier-three suppliers) and dependence on single sources. For each significant risk, leaders set targets, establish tracking mechanisms, and define their appetite for risk. In the case of supply chain risks, the targets might include the maximum time an assembly line can remain idle, or the minimum long-term production capacity needed.

Third, it's important to look back after a crisis. When uncertainties unfold, companies should reassess their strategic positions and question whether their original assumptions still hold. A company could adjust strategies in response to structural changes, such as shifts in the energy transition, the rise of remote work, and consumer trends following crises (like the pandemic and the Ukraine conflict).

Building a resilience muscle

Incorporating resilience into strategic planning is just the beginning (see sidebar "Getting started: How to get on the road to strategic resilience"). Companies, especially in the automotive industry, need to build a resilience muscle—that is, they need to develop flexible and strong processes and systems that go beyond traditional static approaches to strategy planning and risk management. What's more, they should be open to challenging past assumptions about their strategies and their own capabilities.

Regularly review strategy and investments against risk

Companies should develop a view of strategic risk on a quarterly or semiannual basis. This risk report should outline the organization's resilience profile and include updates to strategic risk questions. It should present a clear view of risks, prioritized by impact and timeline, and include updated scenario analyses. In this way, the board can ensure that the company's risk profile aligns with its risk appetite and that management can make informed decisions.

Getting started: How to get on the road to strategic resilience

Shifting to a more integrated approach for strategic risk and resilience starts at the top. In a recent McKinsey survey of advanced-industry players, two-thirds of companies in both Europe and North America said that managing strategic risk and resilience should be the responsibility of the CEO and executive team. While 80 percent claimed to have some form of resilience assessment, only about 30 percent felt well prepared for today's disruptions and uncertainties. Most still focus more on financial and operational risks, rather than technological, business, or organizational risks.

The organization, middle management, and existing governance structures can become overwhelmed if changes are made too quickly. The pace of the transition needs to fit the situation. Some companies may have more time to adapt; but in fast-changing sectors such as automotive, teams may need to move fast. Here are some practical ways to help find the right starting point and pace for expanding strategic risk and resilience management:

— *Find the right starting point.* There are three good ways to kick off conversations about strategic risk. The first is to use a framework to guide discussions with teams across functions and markets about how to improve structural resilience. By including competitor comparisons in these discussions, teams can further highlight areas for improvement. The second approach is to have candid (usually protected and confidential) conversations with senior management about their biggest worries—for instance, issues that aren't being addressed currently or that are going unspoken. This could include discussions about future disruptions that could overburden the organization, such as escalating trade conflicts across critical markets like China, the United States, or Europe. In these conversations, organizations must be willing to review and address strategic decisions from the past that may involve sunk costs but are no longer valid. The third and most effective approach is to integrate strategic risk discussions directly into an ongoing strategy process. This involves assessing the company's initiatives against different scenarios, identifying risk mitigation strategies, and spotting competitive opportunities. This approach, which engages senior management in immediate, relevant questions and helps to build momentum for resilience and growth, is also the most aspirational of the three.

— *Take a step-by-step approach.* Organizations should consider ways to gradually expand the strategic risk agenda. This could include setting up a quarterly review of strategic risks alongside regular performance meetings, launching specific initiatives to address identified risks, investing in resilience measures, and bringing in more external perspectives. Keeping strategy and planning processes flexible can help ensure that resource allocation and performance reviews can adapt as risks change.

— *Sync strategic priorities with capability building.* As organizations explore more risk scenarios and questions, they can expand the central risk analysis platform to include additional risk factors, data from various functions, and longer time horizons. It's also crucial to build new capabilities within the risk and strategy teams by adding skills that help address these expanded needs. This capability building can be done at a relatively low cost and can have a big impact: It can help to reassure senior management that their decision-making has been thorough and well considered. Usually, it takes about 18 to 24 months to mature these capabilities and align them with the company's evolving strategy and planning processes.

The report should test strategic initiatives against a range of different scenarios, not just the usual base, upside, and downside cases. Scenarios that are unlikely but still possible should be included to avoid surprises—for instance, a potential increase in the prevalence of ride-sharing and robo-taxis may mean that fewer customers want to own a car.

Amid the risks, companies should regularly review their resilience capabilities and compare them

with those of their competitors. The auto industry regularly contends with issues such as production volume dependency, cost flexibility, and access to materials and technology. Setting specific targets against these factors, tracking them with clear metrics, and benchmarking themselves against others can help automakers manage these risks effectively.

In today's environment, traditional three- to five-year plans often become outdated in a matter of months. By contrast, quarterly reviews and updates allow companies to respond quickly to external developments as well as internal experiences and challenges. When a new scenario emerges, companies will have a set of options in place and action plans ready. Financial planning is a particularly critical area—one that warrants more frequent reviews by automakers, allowing for staged investment decisions and detailed resource allocation.

Track progress with the right tools

Companies' resilience needs to be regularly tracked with KPIs and key risk indicators (KRIs). Some automakers, for instance, rigorously monitor potential supply chain risks created by their reliance on single suppliers or exposures in certain countries. They track key metrics associated with these risks, update senior management, and intervene if there are significant changes. Indeed, these KPIs and KRIs should be linked to the company's costs and the probability of disruption.

Today's finance models and planning tools enable detailed budgeting and resource allocation. However, they often overlook how strategic risks can affect the organization. A strategy-oriented planning model for risk and resilience should consider important risk factors across the organization—from the supply chain to procurement to production and sales. These are typically expanded models, built in collaboration with the finance team, and they can help leaders assess risk scenarios and make informed decisions. For instance, learning from past disruptions, some carmakers have adopted 24- or 48-hour timelines as a benchmark to respond to disruption. During this time, they can assess the impact from, say, a sudden loss in sales or supply chain shortages caused by geopolitical events.

Lead with resilience and get everyone on board

The quest to build a resilience muscle starts in the executive suite and boardroom (Exhibit 2). Leaders should question long-held assumptions, encourage critical and challenging discussions, and allow for regular review and adjustment. The ability to adjust and quickly correct strategic decisions is arguably the most important factor in building organizational resilience.

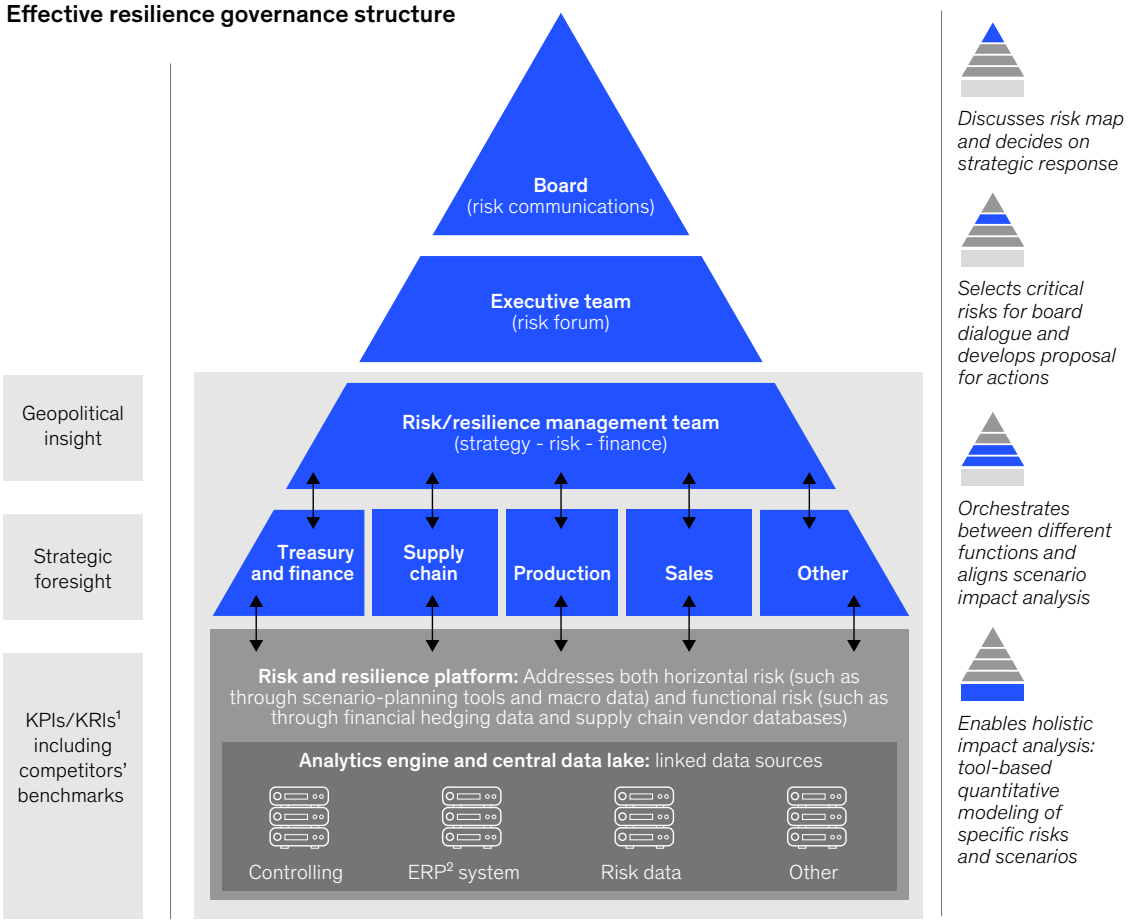
It's equally important to ensure that middle managers understand the shift from fixed strategy and execution cycles to a more agile approach. They, alongside senior leaders, should encourage regular communication and constructive feedback with employees across the organization. Disruptions and the need to make strategic adjustments will only become more frequent, given higher market volatility and changes to the structure of the industry—such as the shift from gas-powered vehicles to EVs. Automakers should ensure that their employees are aware of these shifts and prepared to respond quickly. Training programs and frequent communication about the need for resilience can help everyone understand why changes are necessary and how they contribute to helping the company stay competitive.

While senior leaders may have some of these practices in place, relying on traditional approaches isn't enough to build a resilient automaker—or any company operating at global or international scale today. The stakes are higher and uncertainty is growing, yet resources and management capacity remain limited. Temporary task forces can help handle immediate disruptions, but they can also exhaust the organization over time. Even the most capable leaders will find it harder to stay competitive without a more systematic approach.

Exhibit 2

The ability to adjust and quickly correct strategic decisions is arguably the most important factor in building organizational resilience.

Effective resilience governance structure



[1]Key risk indicators.
[2]Enterprise resource planning.

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In the long run, resilience will be the key factor that distinguishes industry leaders from those that fall behind. To grasp the necessity of resilience, leaders need only look at past disruptions, such as the financial crisis. As changes become more frequent and wide ranging, developing a robust resilience strategy will become even more critical for achieving success.

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The authors wish to thank Torben Oeder, global head of risk management at Volkswagen Group, and Steffen Spreiter, global head of risk management at Porsche Group, for their contributions to this article.

This article was edited by David Weidner, a senior editor in the Bay Area office.

How Carlsberg thrives with resilience

In disruptive times, resilience is essential for both survival and success. Here's how the global beverage giant ensures that it is ready for anything.

In a world shaped by accelerating change, resilience is essential for both survival and success. Today's leaders are increasingly seeing that resilience is about not only enduring crises but also thriving in the face of them. Strikingly, research from the World Economic Forum (WEF) and McKinsey suggests that 84 percent of companies report being underprepared for current trends and uncertainties.[1]

To understand the role resilience plays in large, global organizations, McKinsey Senior Partner Kim Baroudy interviewed Jacob Aarup-Andersen, CEO of beverage giant Carlsberg. Carlsberg is far more than just its famous beer; Aarup-Andersen oversees some 140 brands sold in 150 countries, creating $10.4 billion in revenue last year. What follows is an edited version of their exchange.

Kim Baroudy: The world is full of uncertainty right now—climate challenges, geopolitics, disrupted supply chains, and an unpredictable regulatory landscape, to mention but a few. How do you ensure that Carlsberg is resilient at a moment like this?

Jacob Aarup-Andersen: Carlsberg is 178 years old. Resilience has always been a cornerstone for us. We've learned that, typically, it is not the gradual crises that are the most dangerous, but the unforeseen ones. Those are the moments when resilience is tested—when you really see whether you have the kind of organization that can successfully analyze, adapt, recover, and emerge stronger.

Today's challenges do not exist in isolation; they are interconnected. In Europe, for example, we have faced a regulatory push over the past years while the region faces low productivity growth, energy challenges, and innovation gaps. The war in Ukraine has added to the challenges; it was an unforeseen crisis that demonstrated firsthand how war and geopolitical shifts can dramatically affect our people and operations overnight, forcing rapid changes.

This kind of environment truly puts Carlsberg's resilience to the test. So, I have worked to embed resilience across three key areas of the company: the enterprise, the culture and leadership, and our strategy.

Kim Baroudy: Walk me through that.

Jacob Aarup-Andersen: Yes, I'd be happy to.

Structural enterprise resilience is something that can be built during peacetime. We have established organizational mechanisms that structure our business in a way that ensures we can adapt to shocks quickly and effectively. It is about ongoing capacity building and integration, and we constantly ask ourselves: How do we refine our capabilities to respond quickly and at scale to changes? Do we have the right security and crisis management to navigate disruption and uncertainty? A strong foundation is key, but execution matters just as much. That is why we prioritize empowering decision-making at all levels. By distributing risk and equipping our teams with the autonomy to act, we ensure that when unexpected challenges arise, our people are ready to respond effectively.

Many people immediately associate cultural resilience with grit and perseverance. But there is a deeper question: How do you foster an open, trusting culture where people feel confident raising their hand early when something seems off? Early detection and response are key to managing crises. Leadership is another critical aspect. We guide our leaders through a journey, ensuring that they gain exposure to different markets, functions, and situations. This broad experience makes them more resilient when faced with challenges.

Finally, strategic optionality—the need to be prepared for a broader range of outcomes—is a key term. We are always actively seeking to diversify our geographic and product portfolio. But for each proposed expansion, we prepare "what if" scenarios to anticipate risks for multiple outcomes and build strategic optionality. It's about creating an organization that can take calculated risks, adapt, and seize opportunities. Shifting the focus from mitigation to proactive adaptation is essential for long-term progress.

[1] *Resilience pulse check: Harnessing collaboration to navigate a volatile world*, World Economic Forum and McKinsey, January 21, 2025.

Kim Baroudy: According to our research, shifting market dynamics and evolving customer preferences are among the leading threats that organizations expect will cause major or severe disruptions. Consumers seem to be increasingly prioritizing wellness, including "better for you" products and low-alcohol or nonalcoholic beverages. How does Carlsberg build a resilient market position and ensure growing demand for its products?

Jacob Aarup-Andersen: A diversified brand portfolio is a resilient brand portfolio. Having a range of products across categories not only gives us an array of choices for consumers and retailers in times of stability, but it also allows us to weather economic shocks like inflation, because we have products that fit shifting price sensitivity. With low-alcohol and nonalcoholic products, we are both responding to and driving consumer trends. Our recent acquisition of Britvic [a British beverage company] is another example of diversifying for resilience. Soft drinks is an attractive category, and it brings significant synergies when combined with beer.

Kim Baroudy: How do you reflect on the balance between short-term actions and building long-term-oriented capabilities?

Jacob Aarup-Andersen: Resilience requires balancing immediate crisis response with long-term capability building. The truth is that the two aspects go hand in hand and complement each other. The current disruptive landscape demands both agility in the short term and a commitment to strategic foresight and preventive actions for the future. We must be able to navigate in great uncertainty and sometimes make quite drastic shifts to reposition ourselves strategically. This requires an openness to divergent views, analyses, and scenarios—and then the courage to act decisively. Risk is opportunity, too, and intelligence is key here. You need to know how to look for the right data and to analyze and use it right. And you need to integrate this process into your decision-making.

Kim Baroudy: Let's talk about geopolitical resilience. About a month after Russia invaded Ukraine, Carlsberg decided to quit Russia and sell the Russian business. You became CEO a year later. You've had to manage the "takeover" of Carlsberg's assets in Russia, an extensive and complex separation and sales process, along with legal battles. How have these events [the Russian–Ukraine crisis] shaped how you think about risk exposure, resilience, and developing concrete capabilities to react to uncertainties?

Jacob Aarup-Andersen: Sometimes, you need to go beyond traditional business strategy and have the courage to invest when others might retreat. In Carlsberg's case, the war in Ukraine presented one of the most significant crises in our history. Despite the war, we decided to expand our production capacity at the Kyiv brewery by 80 percent, making it one of the largest investments in Ukraine during this period of conflict. This decision was not just about maintaining business continuity; it was about demonstrating that even in the face of extreme adversity, we can move forward and create lasting value.

Ensuring resilience is an active and ongoing process for us. We are focused on asking ourselves a set of tough questions: How do we ensure resilience translates into action? How do we make sure that we have effective security and crisis management in place? And, importantly, how can we continue to improve our analyses and our ability to respond fast and in a scalable way? We are focusing a lot on this right now. Structurally, strategically, and culturally, we focus on how we can learn and develop across global markets while ensuring proper support.

Kim Baroudy: You have a new initiative to establish a culture that is even more growth oriented and that rewards calculated risk-taking. How are resilience capabilities a part of this initiative?

Jacob Aarup-Andersen: A resilient organization must have an open, trusting, and safe culture, where people feel empowered to act and move. That's what our Accelerate SAIL strategy is all about, and we have been working hard to define it and roll it out over the past year. As the name suggests, we want to not only create strong business results but also foster a new mindset and behavior. Our ambition is to push the boundaries of what we can achieve together by improving an already-strong foundation.

We have developed a set of guiding principles to ensure that this culture is embedded in a way that creates real impact, tailored to local realities but aligned with a shared vision. We want to create an environment where we strive for the extraordinary, foster positive energy and compassion, are passionate about the consumer, make quick decisions, and empower, support, and develop our people to reach their full potential. All these efforts push us toward becoming more resilient.

Kim Baroudy: What have been your biggest learnings about organizational resilience?

Jacob Aarup-Andersen: That the range of outcomes is bigger than we often think. Once you accept this, you begin to look at much broader optionality in your resilience building, extending beyond the usual yearly enterprise risk review exercise. It starts with building structures that ensure early detection, early escalation, and the distribution of decision-making to the right levels to ensure a fast response. This approach ties directly into how we embed resilience throughout the organization and how we develop more adaptive leaders.

Kim Baroudy: You're part of the World Economic Forum's Resilience Leadership Consortium Group. Looking ahead, what are the biggest shifts for companies when it comes to organizational resilience?

Jacob Aarup-Andersen: The biggest shifts require moving beyond short-term, defensive actions and embedding resilience into long-term strategic planning. WEF and McKinsey coauthored a 2025 resilience white paper, and two key aspects stand out for me.[2] The first is about embedding resilience into leadership and decision-making. Boards and executives must embrace diverse perspectives, enable agile decision-making, and foster a culture of trust and adaptability. The second has to do with operational adaptability and organizations focusing on strengthening human-capital resilience by empowering employees to drive execution and growth, decide with autonomy, and respond swiftly to disruptions. This is exactly what we are actively working on embedding at Carlsberg.

Kim Baroudy: Technology trends such as data protection, the need for more effective cybersecurity, and the rise of gen AI are seen as the biggest threats that could create major disruptions for organizations. From what I have seen, Carlsberg is a model for other companies. How do you prepare and prioritize building digital and technological resilience?

Jacob Aarup-Andersen: At Carlsberg, digital resilience goes beyond just firewalls and backups—it's about safeguarding the elements that drive our business forward. Our digital and technology team works across functions to protect critical assets such as customer data and AI tools, while ensuring our tech investments drive growth and enhance trust.

One key step has been strengthening our cloud security. A new security framework allows us to centrally manage security policies for remote teams, IoT [Internet of Things] devices, and cloud applications. This reduces complexity and closes gaps that attackers might exploit. It's akin to replacing multiple locks with a single, smart system that adapts to threats in real time.

As AI becomes a bigger part of our business, we are establishing an AI center of excellence [COE]. The COE provides centralized oversight for all AI projects, ensuring clear guidelines such as mandatory data anonymization and third-party model audits, with policies that align with regulations. For example, generative AI tools used in marketing must go through COE review to prevent chaos when accelerating vetted projects. This approach drives innovation while ensuring ethics and compliance.

For any company, digital resilience is about more than just security; it's about ensuring business continuity and adaptability. When disruptions hit—and they will—digitally resilient companies bend but don't break.

Kim Baroudy: We've covered geopolitics, organization, and digital resilience. Now let's turn to operational resilience, particularly in the face of climate change. Organizations fear disruptions to supply chains and resource availability. As a result, many are moving beyond reactive measures toward

[2] *Resilience pulse check: Harnessing collaboration to navigate a volatile world*, World Economic Forum and McKinsey, January 21, 2025.

strategic actions such as sustainable sourcing, automation, and supply chain restructuring. How has Carlsberg enhanced its operational resilience to climate-related disruptions, and what have been the most important focus areas?

Jacob Aarup-Andersen: We want to be prepared for a wide range of challenges, particularly those that can disrupt our supply chains. Beer is a local business, meaning our supply chains are more localized than those in many other industries. We focus heavily on ensuring that we have alternative supply chains in place for key raw materials and other pivotal items.

However, some risks, such as those brought about by climate change, require a more integrated, long-term approach to resilience. Agriculture, water, and energy are deeply interconnected, and failing to strengthen our resilience could intensify climate-related disruptions. Our strategy includes proactively mitigating water supply disruptions by enhancing water efficiency, investing in renewable-energy solutions, and promoting similar changes throughout our value chain. One example is our push for regenerative agriculture, which can support decarbonization, enhance soil health, and promote biodiversity.

Kim Baroudy: How do you balance improving global operational resilience while ensuring local adaptability? What key lessons have you learned?

Jacob Aarup-Andersen: Each region and market has unique challenges shaped by environmental factors, resources, and cultural heritage. I want to highlight a few real-world examples that showcase how we are working to maximize local value chain resilience.

Take Laos, for example. Carlsberg's collaboration with local farmers and research institutes is helping build a more resilient agricultural system. The results speak for themselves: healthier ecosystems, restored biodiversity, and more productive, climate-resilient farms. Farmers are already seeing immediate environmental benefits, like the return of birds and buzzing cicadas.

Private and public partnerships are crucial, especially when it comes to climate adaptation. It requires incredibly hard work in terms of stakeholder management and engaging the right institutions. There are tremendous opportunities, but building coalitions and bringing stakeholders together across sectors can be challenging. However, this work is essential to drive real progress—shifting the focus from merely mitigating climate change to actively adapting to it.

Another critical driver of resilience is scalable innovation with scalable impacts. In 2022, scientists at Carlsberg Research Laboratory developed FIND-IT, a groundbreaking crop-breeding technology. This tool enables us to breed more resilient crops—like barley and hops—that can deliver high-quality yields amid drought, floods, and changing temperatures.

The ancient grain fonio is another example of how innovation and local collaboration can drive resilience. Grown in West Africa's Sahel region, fonio thrives in drought-prone and nutrient-poor soils. Brooklyn Brewery is establishing partnerships with West African farmers to integrate fonio into brewing. This is about more than sustainability in beer—it's about building supply chains that support local agriculture while promoting climate-adaptive farming.

Many of the most pressing challenges—climate adaptation, food security, and sustainable agriculture—cannot be tackled alone. The most transformative solutions require businesses, governments, and research institutions to collaborate on driving meaningful change.

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In this issue

June 2025
Designed by LEFF

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