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Emerging risk, converging opportunity

IBM Institute for Business Value

Risky business

"Buy the rumor, sell the news" is a stock trader's maxim because by the time you hear the news, it's too late. It's a similar situation today in managing risk. Preparation and anticipation are key to managing risk effectively, or better yet, to turn risks into opportunities for creating value. At first, this observation might appear counter-intuitive. But successfully managing and mitigating emerging risks are among the most challenging-yet-rewarding assignments for chief risk officers (CROs) and their teams.

Identifying emerging risks

Emerging risk is that which has either not yet been identified, has been dormant for an extended period or is associated with a scheduled event, such as an election, where the timing is known but the outcome is not. In any of these cases, the risk has not yet impacted the enterprise in a material way. Emerging risks are difficult to quantify, but enterprises still must prepare for possible outcomes and mitigate their risk exposure.

No matter the type of risk, the typical management process involves identification, assessment, mitigation, monitoring and reporting. This process is often a highly manual undertaking, and it often involves assembling teams to gather data, review news reports, create and explore scenarios and make projections.

Planning sessions can take weeks or months when they are conducted ahead of scheduled or unscheduled events. A paradoxical challenge occurs when attempting to mitigate the risks of thinking the unthinkable. Advance preparation is critical. The risk of not being prepared in advance could result in business disruption, financial loss, damage to reputation and other calamities. Lack of preparedness also could delay the ability to capitalize on new opportunities.

According to a 2017 survey of senior executives, almost 60 percent said they identified changes too late. And three out of four said they sometimes were right on time, but didn't execute the correct response.[1]

Today, companies can use various tools in search of emerging risks, including talking to internal and external SMEs, scenario planning, statistical modeling and decision-tree analysis. In a recent survey, only two
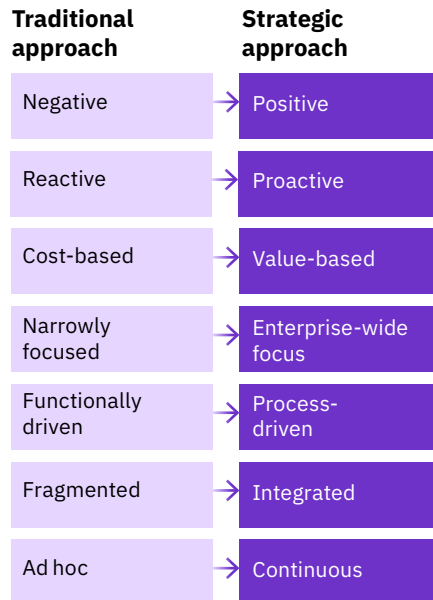
techniques were used by more than half the executives. Of those surveyed, 67 percent said they speak with internal experts, and 60 percent said they use internally generated risk indicators.[2] The use of both external experts and external risk indicators were noted by fewer than 40 percent of respondents. Using external experts and indicators can help avoid an "echo chamber effect" of internal people talking to each other.

Perhaps recognizing the need for improvement, 48 percent of respondents said they should incorporate more multidimensional approaches into their risk management practices.[3] But the question remains: how can improvement be achieved without further slowing risk identification and assessment processes?

A technical breakthrough

Figure 1
Organizations are using risk management to create value in exciting new ways[4]

Traditional approach	Strategic approach
Negative	→ Positive
Reactive	→ Proactive
Cost-based	→ Value-based
Narrowly focused	→ Enterprise-wide focus
Functionally driven	→ Process-driven
Fragmented	→ Integrated
Ad hoc	→ Continuous

A web-based system now exists that applies artificial intelligence (AI) to the scenario-planning approach of identifying emerging risks. The intelligent application continuously monitors multiple real-world sources, such as social media, news and blogs, to identify key driving forces of emerging risk. The system combines human expert domain knowledge with machine reasoning and planning to generate a wide range of possible scenarios. The technology can reduce scenario-planning time from weeks to just days or hours. This technology can potentially radically transform risk management from being tactical and defensive to being strategic, opportunistic and proactive (see Figure 1).

Using AI, CROs and risk teams can more effectively and efficiently manage risk across the enterprise. With AI, risks can be identified and assessed at a deeper level with greater insight, such as at the country or business level, which may be closer to where the risk lies.

AI-based risk systems can scan social media and more traditional news sources to identify "trending" issues and prompt users to select specific risks based on new information. For example, if "recession" is a trending issue, specific risks flagged might include the possibility of decreased foreign investment, lower interest rates or higher inflation. The system also allows for user-selected scenarios even if they're not trending. Based on selected risks, an AI system can generate a range of scenarios. A well-designed AI system will allow the team to iterate on various risks or combinations with speed, scale and scope.

Another important factor is that people often come to risk management tasks with strong biases, which can color final risk assessments. AI systems offer unbiased, fact-based analysis, allowing teams to spend more time analyzing scenarios and options, rather than defending opinions.
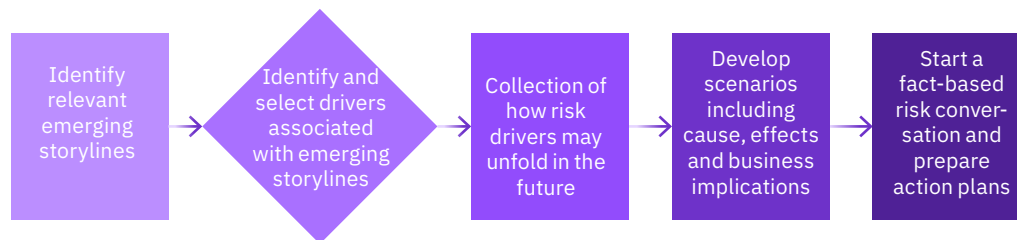
Building effectiveness

The effectiveness of any AI system for risk depends in large part on applying the knowledge of domain experts to specific storylines and risk drivers. A system captures emerging storylines from user-defined sources, such as social media from influential individuals and key regional and local news services over a defined period of time, typically a few days to a month (see Figure 2).

After selecting a trending storyline, an AI system can generate a series of potential drivers that require analysis. For example, if technology in Singapore or India is trending, potential drivers could be:

- Changing local business strategies
- Disruptive technologies
- Increasing regulations
- A growing digital economy.

Figure 2
Streamlining risk identification and management

| Identify relevant emerging storylines | → | Identify and select drivers associated with emerging storylines | → | Collection of how risk drivers may unfold in the future | → | Develop scenarios including cause, effects and business implications | → | Start a fact-based risk conversation and prepare action plans |

The domain experts then examine the drivers. Because they understand the mechanisms by which things happen in a given area, they are able to link together risk drivers into cause/ effect pairings using graphical models called mindmaps. The mindmaps also include optional qualitative estimates of likelihood and impact. The system uses these mindmap models to create plausible scenarios and corresponding consequences for each storyline and driver. The initial work requirement to build mindmap models may be significant, but the experts' knowledge can be shared almost immediately by anyone using the AI system. Because everyone has access to everything the system knows, everyone learns.

CROs may be the least optimistic of all leaders about the benefits of cognitive computing in their function. In 2017, the IBM Institute for Business Value (IBV), in collaboration with Oxford Economics, surveyed more than 6,000 business leaders, including 400 in risk management. Only 7 percent of the CRO respondents recognized adoption of cognitive computing as a significant trend in the next 3 years. Indeed, CROs said that adding human resources would enable them to respond more effectively.[5] This data point is stunning, given the growing importance and acceptance of AI across business functions.

Top performing CROs recognize the potential of AI in risk management. Nearly three quarters of risk managers from top performing organiza- tions in revenue growth and profitability expect cognitive computing to make their jobs easier, while only four in ten of underperformers share that view.[6]

Taking the next step

CROs can immediately begin deploying AI for risk management across their enterprises:

– *Decentralize.* Identifying emerging risk is best done as close to the problems as possible. Countries, functions and lines of business units should play central roles. Expanding teams beyond risk managers to include sales, marketing, legal and human resources, as well as all other businesses and functions, in an organized and systematic fashion across the whole enterprise is likely to broaden their aperture.

– *Appoint or recruit champions with specific domain expertise and a predisposition to accept new ideas.* These champions can help "train" the AI system on the mechanisms and scenarios in their areas of expertise. Putting their business acumen into the system helps the system accumulate knowledge.

– *If it's worth doing, it's worth measuring.* Work with all business units and functions to decide how frequently to assess emerging risk.

Depending on the country and types of risks, the frequency may be monthly, quarterly or event driven. In any case, keep score of accuracy and effectiveness and be open to making changes to eliminate biases and improve results.

Applying AI to risk management has an additional benefit. It can expand the purview of the CFO or other financial executives well beyond finance and accounting to include strategy, business modeling and, perhaps, even futurists or visionaries. AI can provide more understanding and context, and ultimately greater collaboration and innovation across the enterprise.

Identifying emerging risk is not a static undertaking. The challenge – and opportunity – is to use risk management as a strategic tool across the whole enterprise. Indeed, AI can differentiate your organization by making a valuable – and value-driving – asset out of your ability to effectively and successfully manage risk.

Experts on this topic

Edward Shay

Chief Risk Officer & Vice President Pensions Management, IBM
https://www.linkedin.com/in/edwardshay/
ewshay@us.ibm.com

Claudio Martinez de La Vega

Director, Enterprise Risk Management, IBM
https://www.linkedin.com/in/claudio-martinez-de-la-vega-4bb31634/
claudiom@us.ibm.com

Octavian Udrea

Research Staff Member, Exploratory Stream Analytics, IBM Research
udrea@us.ibm.com

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