Enterprise Risk

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The official magazine of the Institute of Risk Management

Time for action: risk managers' role in climate change / **Sharpening the saw:** operational risk disclosures lag / **Guidance for sound practice:** a road to improvement / **Hacking risk:** case study in crowd-sourcing solutions

Puente Nuevo: A new initiative to build bridges between IRM and risk professionals in Latin America and Spain is underway

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Winter 2020

Editorial

The next big challenge

As this magazine starts landing on doorsteps, the United Nations is due to host a virtual climate change summit in France. The United Nations secretary-general, António Guterres, gave a grim assessment and warning to the world in time for the summit. "Humanity is waging war on nature," Guterres said. "This is suicidal."

If that does not focus minds, data from the World Meteorological Organization might. It has calculated that global temperature in 2020 is on track to end about 1.2C warmer than the end of the 1800s. That flies close to the 2C rise scientists have said would make large parts of the globe unsuitable for human habitation.

Now that vaccines are on the way for COVID-19, it would be a good time for risk managers to take the lead on this next, big threat. While the pandemic has claimed over 1.5 million lives, immunisation is relatively straightforward now that drugs exist. Straightforward, that is, compared to what measures need to be taken to curb and combat climate change.

> **How many risk managers have properly considered how transitioning to a net-zero economy will affect their organisations, and what are they doing about it now?**

In this issue, Alyssa Gilbert rightly argues that businesses and governments need to act to ensure a move to a net-zero carbon economy happens justly (*Time for action*, pp. 16-21). As with the pandemic, some sectors will be decimated – think those that depend on or produce fossil fuels – while others will thrive.

Some readers may recall IRM's survey of risk managers' preparedness for a pandemic in the last issue of the magazine. One third had not considered a pandemic from a risk management perspective prior to COVID-19 – and, of those who had, 20 per cent had taken no action.

That raises the question – how many risk managers have properly considered how transitioning to a net-zero economy will affect their organisations, and what are they doing about it now?

There will be many other issues to tackle as we emerge from the extraordinary times COVID-19 have brought. But given the bigger, more existential threat climate change risk poses, risk managers should ensure that these challenges do not become a displacement activity for dealing with preparing for net-zero.

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About the IRM
The IRM is the leading professional body for Enterprise Risk Management (ERM). We drive excellence in managing risk to ensure organisations are ready for the opportunities and threats of the future. We do this by providing internationally recognised qualifications and training, publishing research and guidance, and setting professional standards.

For over 30 years our qualifications have been the global choice of qualification for risk professionals and their employers. We are a not-for-profit body, with members working in all industries, in all risk disciplines and in all sectors around the world.

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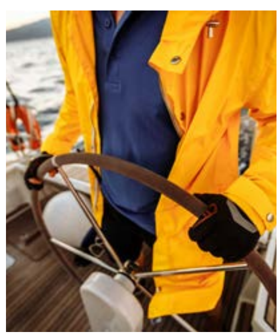

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On target

IRM's commitment to the armed forces has received an employer award

Earlier this year, we were proud to let members know in this magazine that IRM had signed the Armed Forces Covenant (see *Second front*, Spring 2020). As a captain and county public relations officer in the Kent Army Cadet Force, I've long been aware that many military personnel deal with complex and often dangerous situations on a daily basis. It may not be called risk management in the field, but in reality that is precisely what they do.

The covenant means that IRM is committed to helping support those who have served the nation through military service find a route to using their considerable skills and knowledge once they leave. The crossovers with risk management are many and include strategic thinking, assessing and mitigating risk, analytical, communication and planning skills, as well as the ability to implement plans effectively.

Bronze

We are particularly pleased to be able to announce that we have now been awarded the bronze award from the government's *Defence Employer Recognition Scheme (ERS)*, which encourages employers to support defence and inspires others to do the same. The scheme encompasses bronze, silver and gold awards for employer organisations that pledge, demonstrate or advocate support to defence and the armed forces community, and align their values with the *Armed Forces Covenant*.

On receiving the award, IRM chair Iain Wright, CFIRM, underlined our Institute's deepening commitment to the scheme.

"There are some 200,000 people in the armed forces, and many of them are making risk management decisions every day. It is vitally important that the armed forces and businesses are mutually engaged, and IRM will be at the forefront of this; we are proud to be recognised today with this award," he said.

He said that his acknowledgement of the award was part of a wider pledge by IRM to increase the risk management profession's visibility to military personnel and veterans. For its part, IRM is able to provide accessible and relevant training and qualifications that will help military personnel make the transition into the business world. And it is a recognition that the military has a lot to offer the risk management profession.

"Many of the skills learnt by service personnel naturally cross over into the world of risk management, and we're keen to ensure these skills are recognised, and that we can help support their lifelong learning and career transition where possible," he said.

> **Plenty of military personnel make a successful transition into risk management**

Crossing over

Plenty of military personnel make a successful transition into risk management. In our Spring feature, for example, we wrote about how Sarah Christman, CMIRM, made the move from being on active deployment in the US navy to working as a risk director at a large financial services firm. Mark Clegg, SIRM, switched from a 23-year career in the Royal Air Force to a risk manager who has developed strong expertise in risk resilience and cyber-risk – in fact, he was head of IRM's cyber-risk special interest group. More recently, I've spoken to Ian Philpot, who is vice president senior risk specialist at a global bank, who secured his first job in risk on a scheme for armed forces veterans. "I think my boss took a chance on me as I already had a risk management view of the workplace honed from my military career," he said.

One of our qualifications is now eligible for government funding through the ELCAS scheme for veterans: the Certificate in Operational Risk Management. Members of the armed forces also receive a 10 percent discount on IRM's training – including our flagship *Fundamentals of Risk Management Course.*

Victoria Robinson is IRM's head of marketing and communications.

Trending

DATA

The latest stories and news affecting the wider business environment as interpreted by our infographics team

Top perceived risks for businesses globally

Covid-19 pushes employment issues to the top of the agenda

35% Unemployment or underemployment

32% Spread of infectious diseases

27% Fiscal crises

26% Cyber attacks

26% Profound social instability

Source: World Economic Forum, Regional risks for doing business

Fines biggest measure of investment in legal compliance

With fines for anti-money laundering breaches and data protection on the increase, how do organisations measure the financial return of its investment in corporate legal compliance?

54% Regulatory fines

46% Productivity

46% Reduction in costs to the organisation

38% Tribunal/ compensation claims

35% Share price

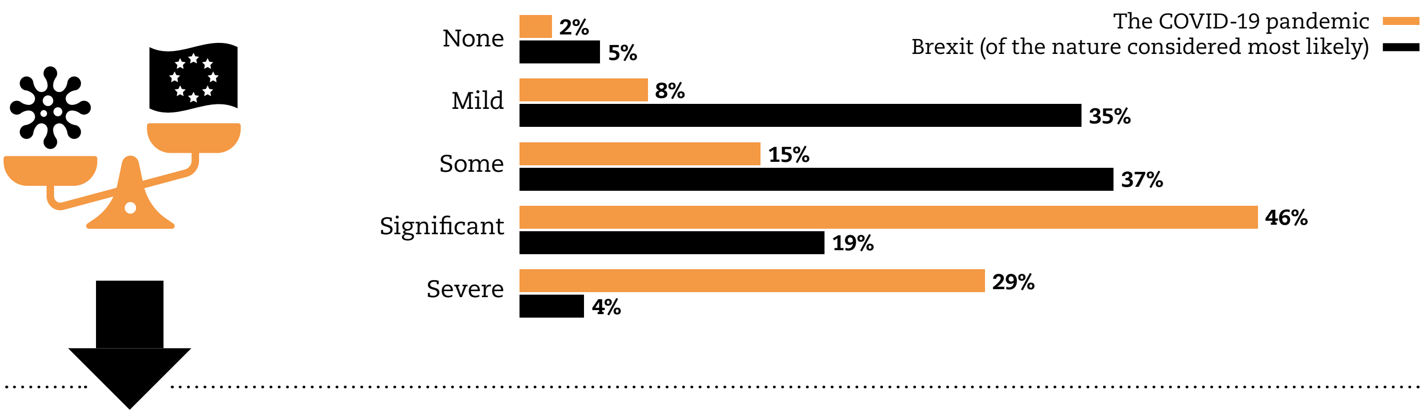
Source: Osborne Clarke, COVID-19: compliance risk survey 2020

Pandemic vs Brexit

Business leaders are more concerned about the impact of Covid-19 on their businesses than they are about leaving the European Union

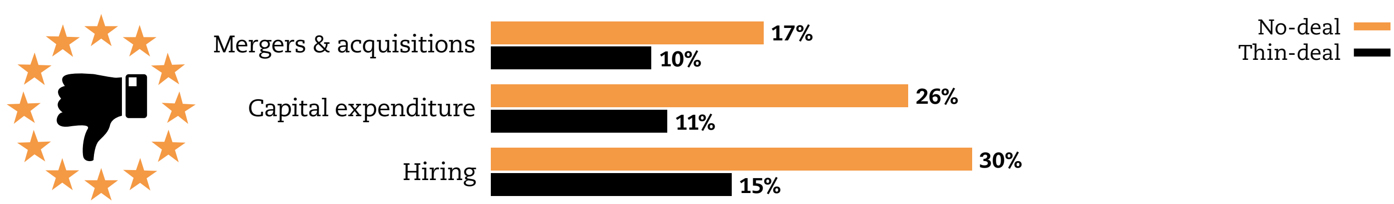
Negative effects of Covid-19 and Brexit

% of CFO's who rate the negative effects of the Covid-19 pandemic and Brexit on their own businesses, over the next 12 months, as the following:



Negative effects of a 'no-deal' or a 'thin-deal' Brexit

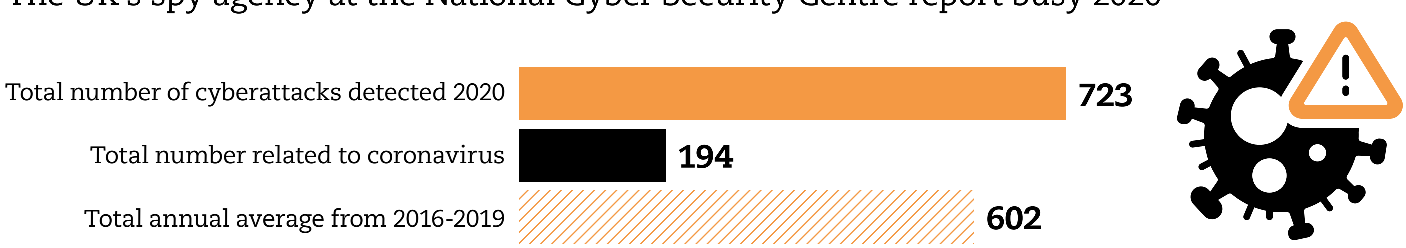
% of CFO's who expect to decrease their business activities in the following areas over the next year in the event of a 'no-deal' or 'thin-deal' Brexit. 'No-deal' implies UK-EU trade under WTO rules while 'thin-deal' implies tariff-free goods trade only.



Source: Deloitte CFO survey, Q3, 2020

Over one quarter of cyber attacks Covid-19-related

The UK's spy agency at the National Cyber Security Centre report busy 2020



Source: National Cyber Security Centre annual review 2020

Puente Nuevo

A new initiative to build bridges between IRM and risk professionals in Latin America and Spain is underway, as the Institute's ambassador for the region José Morago CFIRM explains

BY ARTHUR PIPER

When José Morago was invited to become IRM's ambassador for Latin America and Spain, he felt both excited and a little daunted. As a native Spanish speaker – originally from Madrid – a highly experienced risk leader, and a former chair of the board of IRM, he is ideally qualified. But COVID-19 has made travel and video communication more difficult – and the region is richly heterogeneous in culture, languages and economic development. Understanding both the complex opportunities and risks the region faces, as well as taking a nuanced approach to each part of the vast geographical area, will be key to success.

Latin America is a difficult area to define accurately – but Morago's remit will include Spain, South and Central American countries, the Caribbean – as well as Mexico (see map). The region is unified more by language than geography strictly speaking because its inhabitants mostly speak Romance, or Latin, Languages – Spanish, Portuguese and French. There are an estimated 450 million Spanish speakers globally, and most live in that zone, so it is no surprise that there is common cultural ground between parts of Europe and Latin America.

"It is worth highlighting the fact that Spain has been

> **Given its size, Latin America is a region with significant growth potential and represents a great opportunity for IRM**

influential in promoting best practice in business and in driving knowledge of risk management and better governance because Spanish banks and businesses – Santander and Mapfre, to name just a couple – have a language advantage," he says.

So far, Morago has been pushing on open doors. Over the past few months, he has contacted business leaders, regulators and risk management associations across the region. Those conversations have given him a more grounded view of the major challenges the different sectors and regions face, and a better understanding of how risk management will be able to help in overcoming longstanding social and development issues.

Potential

"Given its size, Latin America is a region with significant growth potential and represents a great opportunity for IRM," Morago says. "But South and Central America in particular have complex environmental, social and economic challenges where good risk management practice and skills could make a huge difference."

On the plus side, Latin America has great potential for businesses seeking rapid growth. For example, in many countries only between 30 per cent and 50 per cent of the population has a current account – compared with the UK, for instance, where approximately 97 per cent of adults do. Similarly, the ratio of life insurance premiums to GDP ranges from around 0.37 per cent in countries such as Brazil to 2.84 per cent in Chile, according to the agency Statista. This compares with about 4.8 per cent in Europe – and roughly 8 per cent in the UK. Insurance

> **There are material structural challenges in many of these countries, which have been amplified by COVID-19**

MAP

> Improving governance and resilience and risk management practices could be very important not only in terms of developing the public and private sectors but also in managing some of the physical and economic risks that the region is facing

penetration is low, less important to those economies as a sector, and many businesses and individuals are relatively unprotected from disasters and accidents. Financial services is effectively a fledgling sector in some areas compared with more developed countries. In addition, there are about 106 million young people in the region – between 15 and 24 years of age – and educational attainment has improved in many countries over the past decade, according to the United Nations – meaning that a more educated workforce could take advantage of less labour-intensive industries.

And finally, Latin America's unique mobile subscribers are expected to increase from 416 million in 2018 to 484 million in 2025, making Latin America's mobile phone market one of the fastest growing in the world. This could pave the way for deeper digitalisation of services, according the mobile research agency GeoPoll.

Challenges

"Despite the fact that it is a big region with strong potential, there are material structural challenges in many of these countries, which have been amplified by COVID-19," Morago says.

Spain, for example, relies heavily on travel and tourism, which accounts for about 15 per cent of GDP. This sector and the jobs associated with it has been hard hit by the impact of COVID-19. Otherwise, the Spanish economy is similar to most European territories. On the other

> In creating this bridge where current businesses may find ways to operate better, IRM could also become a reference point for a richer understanding of the real risks and challenges facing people in the area

hand, South and Central American countries often face deeper structural challenges. Many had low growth prior to the pandemic and have suffered from the poor management of public finances. There are many small and micro-enterprises that have traditionally focused on agriculture, but with a general lack of progress in digitalisation (because of governments failing to invest enough in critical infrastructure) economies can be overly dependent on such low-growth sectors. In many countries, social discontent over lagging economies, poor public services and corruption are common but have brought in governments less willing to tackle those deeper structural issues.

"Some of the root causes of these problems are growth that has been driven by the high-intensity use of natural resources and too much reliance on low-skilled labour, which is not very effective in reducing poverty," Morago says. This situation has been made worse by extreme climate events in Caribbean countries affected by floods and storms.

That makes the transition to a net-zero emissions economy not just an opportunity but a need, he believes. The Inter-American Development Bank, IDB, forecasts a net increase of 15 million jobs by 2030, if the focus switches away from deforestation and polluting industries to decarbonisation. The digital transformation of businesses and activities that could come from better infrastructure could also

PROFILE

José Morago, global ambassador for Spain and Latin America

José Morago had spent five years in Spain working at Banco Santander before he became involved with risk management. He had moved to Boston College in the US to take a master's in finance at the Carroll School of Management while working at the insurer Liberty Mutual. He helped them implement their first risk management framework – and was hooked.

"I enjoy and am fascinated by risk management because the discipline – like myself – requires a growth mindset," he says. "You need to learn every day, to be alert to emerging issues and practices." In addition, it requires different approaches and styles of working and problem solving each day – from very strategic, to very detailed and analytical; from actual risk to emerging risk.

After Liberty Mutual, he had a range of jobs – from working as an analyst at Moody's to taking a position as chief risk officer at Ageas Insurance – before becoming group risk director at the insurer Aviva. Originally, he says, the finance industry saw risk management largely in terms of regulation and compliance. But as Morago spent times in different parts of the business, such as underwriting, reinsurance and finance, his view changed.

"Very quickly I realised that when looking at the potential losses and concentrations related to a company's book, the business activity and the physical infrastructure – I saw that the potential damage was so real. That you needed risk management to make good business and strategic decisions." The discipline spanned the gap between strategy and what was actually happening at ground level.

After a stint at the Financial Conduct Authority, Morago set up his own consultancy business with focus on risk management and regulatory issues.

In addition, he has been a long-term member of IRM, including serving on its board for six years – and becoming chair in 2015 when the Institute was redefining its strategic goals.

"I was proud to be involved during a significant period of transformation," he says. IRM moved offices, appointed a new chief executive officer and reviewed its strategy during this time. "This planted the seeds of the current success of IRM – significantly growing its membership and moving from a very UK focus to something much more agile and international in its view and operations," he says.

boost the region's performance and alleviate social problems. But making these things happen at the speed and scale needed means attracting investment and improving the way that funds are spent and managed.

Governance

"Improving governance and resilience and risk management practices could be very important not only in terms of developing the public and private sectors but also in managing some of the physical and economic risks that the region is facing," Morago says. Practical risk management intervention could greatly reduce the human losses and economic damage that hurricanes and floods cause, for example. And global institutions looking for green investment opportunities, which could improve the environment and create jobs, are more likely to feel confident if the businesses involved can demonstrate sound risk management practices backed up by transparent reporting.

In the business sector, some large local organisations having taken on a historical challenge – to transform longstanding family businesses into privately owned organisations, which have different sets of investors and big ambitions. That also demands more transparency and a greater range of professional skill sets, including risk management.

"In Latin America – South and Central America in particular – you have many of the local banks and insurance companies which have recently been family-owned trying to internationalise their businesses and to trade on the New York Stock Exchange and other bourses. They are bringing skills and people into the region – but there is still more to do in building trust through internal governance and transparency," says Morago.

Whether it is importing skills from other countries, attracting investment or aiming at international expansion, collaboration is in the air. From the conversations he has had over the past few months, he has learnt that people are open to collaborate and build partnerships to deal with these issues. But in the short term, like many other people, they will be engaged with recovering from the effects of COVID-19.

Above: Rio De Janeiro, Brazil's second largest city.

> **Mexico, Brazil, Chile and Peru are well on the road to taking a risk-based approach to risk management**

Ready for risk management

While risk management could contribute to alleviating the region's long-running challenges, the maturity of the profession across the region is uneven. Again, Spain's risk management practices are strong in such sectors as financial services, energy and the environment – even if more could be done to improve the profile of the profession in that country. From Morago's discussions with insurers, practitioners and regulators, he has concluded that countries such as Mexico, Brazil, Chile and Peru are well on the road to taking a risk-based approach to risk management and have expanded the profession's remit to cover some non-financial risks. In other regions, risk management is stuck in the 1970s, but pressure for reform is building.

"Regulators, banking and insurance associations are pushing in those regions to encourage institutions and businesses to take a more risk-based approach, and to adopt more sophisticated ways, for example, of measuring capital in the financial sector," he says. So, while the consultancy March says that 40 per cent of organisations in Latin America have a medium level of maturity

in risk management, it agrees with Morago that change is afoot: "… [there is] clear and determined progress in the search for organisational resilience." That makes the timing for this IRM initiative auspicious.

"People are interested in learning about and adopting better risk management practices and also in understanding non-financial risk methodologies to give them a more sophisticated grasp of enterprise risk, culture and the topics where IRM is in a strong place to help," he says. "There is also more to do around data security, cyber protection, climate-related risk – and a significant opportunity for improving non-financial risk management and helping with specific risk areas."

Building bridges

Morago's discussions with local associations to explore potential collaborations has got off to a good early start. He is in early talks with the regional association of supervisory bodies to explore potential synergies, and he has successfully reached out to local risk associations.

"Some countries, particularly the more developed ones, have their own equivalents of IRM, and generally they are open to partnerships that will increase the skills and knowledge of their members," he says. "That may include promoting the IRM certificate and delivering our training – those discussions are ongoing but look promising."

He is hoping that in the more medium term, those professional collaborations will help lift the profile and credibility of risk managers across Latin America – particularly in regions where the profession is still stuck in the past.

This part of the initiative chimes with IRM's existing strategy to help internationalise and standardise (where possible) the enterprise risk management profession. Readers of this magazine may recall a recent editorial on the body's initiatives in North America, India and Africa. So far, those projects have taken advantage of the international reach of the English language. This time, IRM is looking to develop more language-specific resources, initially in Spanish. That could include developing a newsletter for the region, translating some existing training courses and – over time – creating new channels of communication.

Community

"We want to help with thought leadership and, in the future, be more present and participate in the region through conferences, training and webinars," Morago says. "We are now intensely focused on connecting with the region and the local leaders and explaining the benefits of IRM to their specific challenges – as well as listening and understanding the specific types of help they need."

In the longer term, these activities should help IRM to build a stronger risk community in these Latin-speaking countries. At present, while there are many associations for businesses, industries and regulators, there are few that specifically address the needs of individuals – including risk professionals.

"There is a lot of demand and interest for professional qualifications – interest in improving levels of education on risk," he says. "Also, in order to boost knowledge in specific risk areas, IRM may, in the medium term, create special interest groups across the region – for example banking in Latin America, or climate change for South America. All of that will take time, but having that sense of community and a proper platform to share and air views will be very valuable."

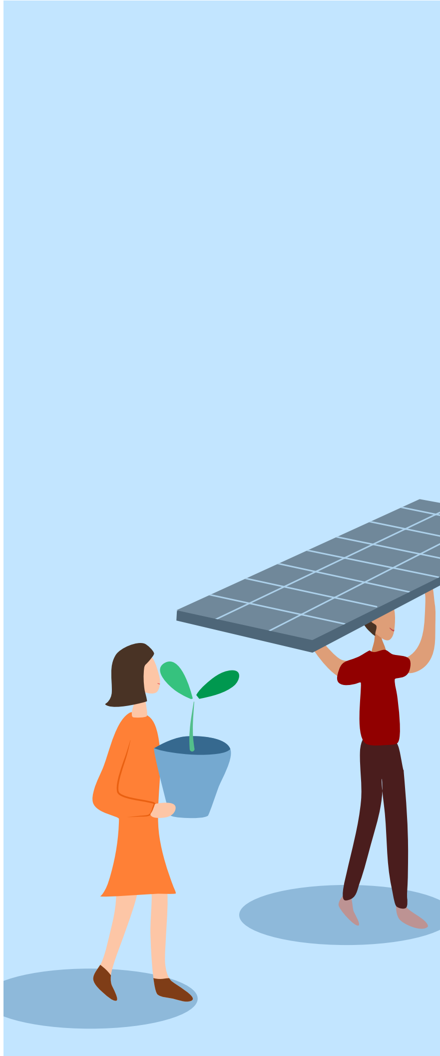
While a primary goal is to build IRM's membership in the region and enable them to subscribe to training, qualifications and ways of building knowledge and skills, the traffic will be two way. "In creating this bridge where current businesses may find ways to operate better, IRM could also become a reference point for a richer understanding of the real risks and challenges facing people in the area," he says.

> **There is a lot of demand and interest for professional qualifications – interest in improving levels of education on risk**

Time for action

Climate change is accelerating, and businesses need to act now if they are to achieve a just transition to the new reality

BY ALYSSA GILBERT



Even with committed actions to reduce greenhouse gas emissions, climate change will have an impact on a wide range of social and natural systems, including the global economy and businesses. These impacts are the result of the physical effects of climate change translating into real-world problems for people and businesses.

It would be difficult to avoid the topic of climate change risk these days. Just before the coronavirus hit, public interest in the UK was at an all-time high, and recent polls have indicated that despite a renewed prioritisation of the economy and health brought about by COVID-19, environmental issues are still extremely important to many.

> Global warming will often be felt unevenly across different areas, for example, exacerbating extreme heat in areas that are already very hot

Commitments

This public concern is reflected in recent international positions. In 2019, the UK was the first to commit to a target of reducing its greenhouse gas emissions to net zero by 2050. Now, China, Japan and South Korea all recently announced targets to reduce their emissions of greenhouse gases to net zero – where the amount of greenhouse gas produced is the same as the amount

removed from the atmosphere. This is expected to happen in 2060 for China and 2050 for Japan and South Korea. The former vice-president Joe Biden, the US president-elect, has made climate change a significant part of his election platform, and it is now one of the four central areas of his transition plans. Global businesses are also putting long-term climate change goals in place, and making strategic decisions based on the urgency of this challenge including actors in the oil and gas sector, such as Ørsted and BP.

These commitments to reduce greenhouse gas emissions reflect a growing understanding that the impacts of climate change will simply become unmanageable if we continue to emit greenhouse gases at our current rate. We need to make those reductions sharply and immediately. Human activity has already caused a global average temperature increase of 1.1C since pre-industrial times, and this temperature increase is, in part, responsible for recent heatwaves, wildfires and more intense tropical storms, and the attendant human impact.

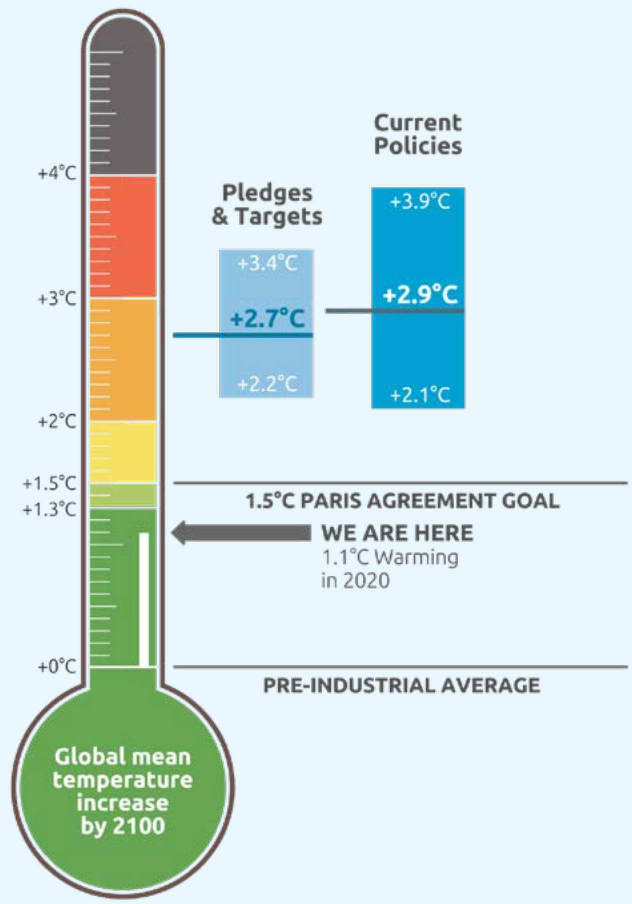
However, while recent increased commitments are welcome and will help reduce the scale of future damage, our current trajectory already means that we will have to face some inevitable impacts of climate change.

What are these risks?

The initial physical risks include increased average temperatures around the globe. Based on current policies, we are on track for a 2.9C average global temperature rise (see *Climate action tracker*). Do not be misled though. This figure reflects an average temperature increase.

> **Major cities including London will face increased risk of flooding – tidal, river and flash flooding – and significant heatwaves**

CLIMATE ACTION TRACKER



Source: Climateactiontracker.org – global update

> **Businesses that are flexible and nimble may find it easier to navigate the transition to a net-zero, climate-resilient future**

Global warming will often be felt unevenly across different areas, for example, exacerbating extreme heat in areas that are already very hot. Warmer temperatures allow the air to hold more moisture and alter precipitation patterns which, on average, make wet areas wetter and dry areas dryer. In addition, the increased heat in the ocean system, and related ice and glacier melt, are causing sea levels to rise.

The physically changing environment leads to consequences for people – droughts, floods, crop failures and so on. The severity of these impacts relates strongly not only to the scale and direction of the changes but also to the local context, both physical and human, such as the exposure and existing vulnerabilities of the people and entities being affected.

Estimates of the impacts of climate change on cities and urban centres, where the majority of the world's population already live, are significant (see C40 *The future we don't want*). Major cities including London will face increased risk of flooding – tidal, river and flash flooding – and significant heatwaves. If global temperatures do rise by 2C above the pre-industrial average (and we are already at 1.1C), a summer like the exceptionally hot summer of 2018 could be expected one in every two years. In built-up areas, heatwaves can be up to 10C hotter than the surrounding countryside due to the urban heat island effect – heat concentrating in cities due to the density of concrete and buildings.

The effects of climate change in other parts of the world can be disruptive to food supply chains, for example, leading to shortages and price rises in some cases. All of these impacts are felt more acutely by people with lower incomes, who are more vulnerable, and less resilient. The effects on these communities can lead to worse health outcomes and greater economic impacts (sometimes in relative terms, and sometimes in total economic terms).

Changes to precipitation patterns are a cause for concern too, even in countries perceived as quite wet, with drought and water shortages more likely in regions like southeast England. Water companies in the UK are already working towards more efficient water use to help manage this risk. Water shortages also have the potential to impact other sectors, such as the power sector, which relies on water for cooling, as well as the agricultural sector. Globally, these changes will affect different communities in different ways and have the potential to exacerbate existing inequalities, potentially triggering human migration, social instability and conflict in some parts of the world under a perfect storm of factors.

Business impact

But what does this collection of impacts, which are so varied around the world, and across populations, mean for businesses? These changes bring both opportunities and risks. The risks for businesses can be broken down into three types: physical risks, transition risks and liability risks.

First, physical risks relate to the direct impacts on your sector caused by the changing climate. These include those described earlier – increased temperatures, changed precipitation patterns and intensity and, in some cases frequency or duration of extreme weather events. To understand these better for your business, you need to take a close look at your assets, investments, operations, supply chains, staff and their exposure and vulnerability to these impacts. You need to interrogate your plans for the future and ensure that they take these impacts into account sufficiently.

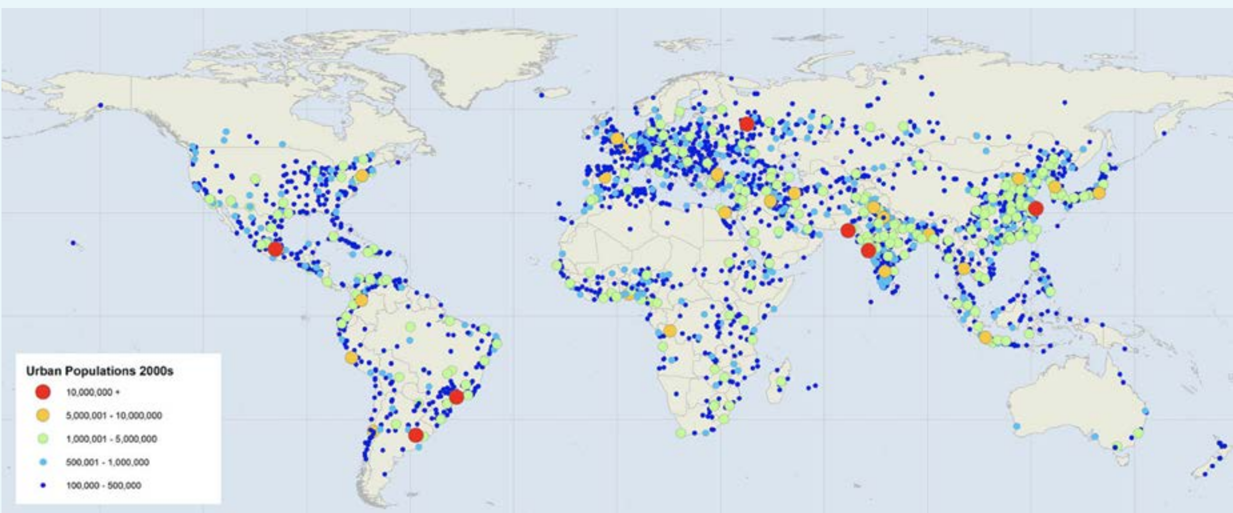
Second, transition risks relate to the challenges and opportunities that climate change policies might bring to your business. The net-zero greenhouse gas targets mentioned at the start of this article may open up new areas for growth, or signal areas that may no longer be profitable for you in the future. Businesses that are flexible and nimble may find it easier to navigate the transition to a net-zero, climate-resilient future.

Finally, liability risks relate to the risk of litigation in the future if entities ignore the volume of evidence available on climate change and make poor decisions that have a negative impact for people. Cases of climate change related litigation are growing (see *LSE global trends in litigation database https://bit.*

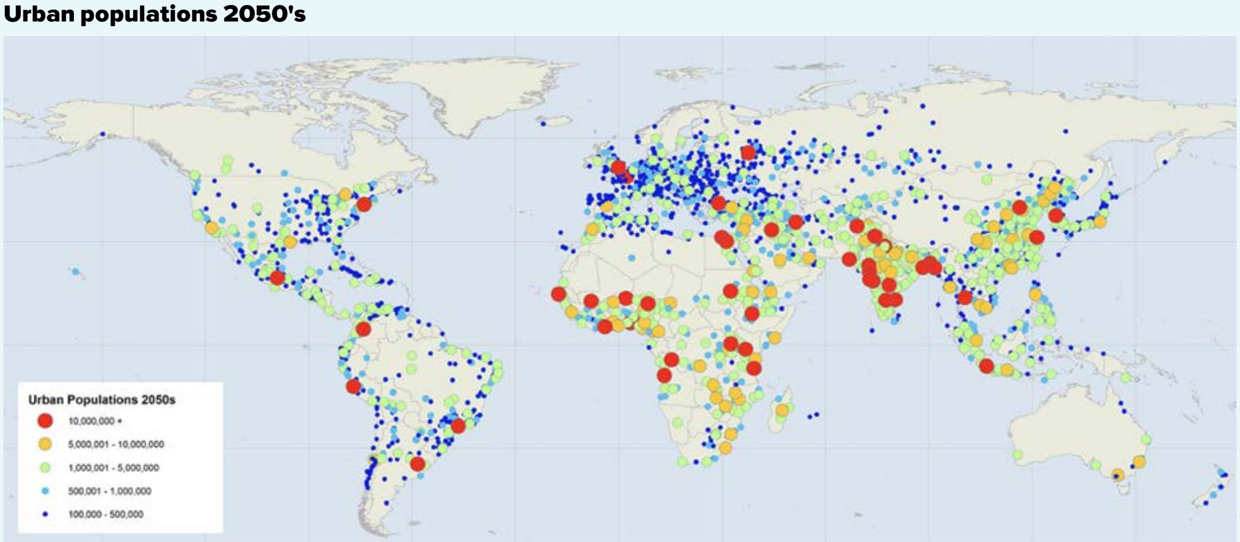
C40 THE FUTURE WE DON'T WANT

The maps shows global cities with populations 100,000 and greater in the 2000's and estimated urban populations in the 2050's. The growth of cities means that ever more people will live in urban areas that are at risk from climate impacts such as heat extremes, water availability, food security, sea level rise and energy disruptions by the 2050's. *Find out more at https://bit.ly/37mPdZv*

Urban populations 2000's



Urban populations 2050's



Source: UCCRN Technical report – C40 The future we don't want: how climate change could impact the world's greatest cities *ly/3fS1zg4*), and this could be a cause for concern for some businesses.

Achieving a just transition

Overall, the gains in tackling climate change are positive for society. However, making changes to reduce greenhouse gas emissions and to adapt to the inevitable impacts of climate change described above will not be good for every individual or business. It is important for both individuals and corporations to acknowledge the fact that there will be winners and losers as we move to a zero-carbon, climate-resilient world.

As we move to reduce greenhouse gas emissions, many new industries will grow and flourish, such as renewable power, hydrogen technologies, improved efficiency technologies and investments in nature-based solutions such as restoring mangroves (which protect coastal communities, provide employment and absorb carbon dioxide). However, at the same time other industries and technologies are being phased out, such as coal, the internal combustion engine and eventually, oil and gas. These sectors, and their related supply chains and communities, support thousands of jobs, and they are the bedrock of the economy in some countries.

Considering how to create new skills for people in affected sectors and communities, and how to make sure these people have access to a range of high-quality jobs, for example, as we make these changes, is known as the just transition.

This concept of a just transition also relates to the way in which a country chooses to invest in a net-zero economy. Policies to reduce greenhouse gas emissions will impact some people differently, even becoming regressive by costing the poor more than the wealthy. For example, taxes on polluting diesel and petrol fuels may unduly impact people in rural areas without access to public transport options, or blanket high taxes on flying may prevent equitable and fair access to international travel.

Similarly, policies that try to protect people from the effects of climate change such as flood, or coastal defences, will impact some people more than others. This could, for example, affect insurance premiums, or restrict the areas where people can build houses. While these measures are important risk management actions, the costs of these activities need to be distributed fairly.

Above: Changes to precipitation patterns are a cause for concern, even in countries perceived as quite wet.

> **There will be winners and losers as we move to a zero-carbon, climate-resilient world**

Risk management

By taking a long-term, risk management approach internationally, nationally and within businesses, we are reducing the greater costs – both privately and at a societal level – that would arise from having to manage more significant impacts later, in a warmer world. Similarly, being prepared avoids a purely reactive response. Being prepared makes sense – think about our recent experience with the COVID-19 pandemic. However, the balance of costs and savings in the short, medium and long term will look different in every business

TOP TIPS FOR RISK MANAGERS

1. Get comfortable with the topic, do some research or attend a short training session with the many experts providing advice on climate change risk.
2. Identify your internal allies: figure out who can work with you on these issues at board and executive level.
3. Scope out the climate change risks for your business, across the physical, transition and liability risks. You may want external help to get started, working with trade bodies or with expert consultancies.
4. Find ways to integrate this risk assessment into your existing processes, including monitoring and reviewing approaches.
5. Don't forget your stakeholders – communicate with key external partners too, be they shareholders, customers or your supply chain, so that you can work together on any commitments.

> Businesses may wish to appoint a climate change expert to the board, or as part of an executive committee, or include a consideration of climate change explicitly into risk assessment protocols

context. Managers need to be able to separate winning strategies from others and consider what approaches are appropriate for those businesses and communities that might be left behind.

Climate change should be a risk that business executives consider alongside their usual planning cycles, applying the same analysis as you might in the case of other unknowns, and embedding considerations into periodic decision-making processes. Businesses may wish to appoint a climate change expert to the board, or as part of an executive committee, or include a consideration of climate change explicitly into risk assessment protocols. These approaches can help build a more informed assessment of climate change risks into a business at all levels.

There are layers of uncertainty that affect an assessment of what climate change means for any business strategy and operations. There are uncertainties about how much global greenhouse gas emissions will rise and, in turn, there are further uncertainties about the precise warming these emissions will cause and then a further layer of uncertainty about the precise physical impacts that will result. Here, of course, research and scientific data can help us reduce and navigate those uncertainties.

However, there are further difficulties in assessing exposures and vulnerabilities of those affected. Furthermore, assessments of transition risk rely on predictions about the policies that governments will commit to and implement, and so the risks associated with the transition also have some unknowns. These transition risks can be dependent on key factors, such as the recent US election, but will also depend on more gradual trends such as human behaviour change related to climate change – for example, less meat consumption, the uptake of electric vehicles and so on.

But understanding risk, and managing these uncertainties, are the core skill set and unique expertise of the risk management profession. Risk managers should make it their business to categorise, understand and create pragmatic and rational approaches to decisions in the face of the climate change challenge. There are a growing number of sources of information that seek to help with these risk assessments, but the most important tool of all is the skilled risk manager themself.

Alyssa Gilbert is the director of policy and translation at the Grantham Institute – Imperial College London, where she connects relevant research across the university with policymakers and businesses. Prior to joining the university, she worked at a specialist energy and climate consultancy. She is also a member of the Natural Environment Research Council's advisory network.

Sharpening the saw

Operational risk disclosures need sharpening up if banks are to cut the mustard under the disclosure regime that starts in 2022

BY CAMILLE FRADIN AND DAVID LANNOY

Risk managers might not be in charge of taking business or strategic decisions, but they are critical contributors to the decision-making process. Their role should offer insights that will maximise the chance to protect and create value in their organisations.

While we would believe that risk managers are good communicators, we have identified concerns in the current risk disclosure practices of companies. We have found that risk disclosures are dispersed throughout reports, that disclosures vary in quantity and quality, that the disclosures often use generic language, and that disclosures lack focus on actions that are to be undertaken.

This suggests that many risk managers are not taking advantage of the positive effects of drafting good risk management disclosures. Nor do they make visible the actions taken to reduce risk exposure to shareholders in order to gain trust – or make their risk management more transparent to increase organisational legitimacy.

> **Many risk managers are not taking advantage of the positive effects of drafting good risk management disclosures**

Crucial driver

Those firms with growing market shares tend to give more consistent and rigorous risk disclosures to prove

that they maintain high standards as they continue to expand. Companies with good performance provide higher-quality risk disclosure, as they report their strengths to improve stakeholders' confidence. The quality of the disclosures is a crucial driver for investor and market confidence.

We have conducted fieldwork analysing the annual reports and operational risk disclosure reports from 18 banks from three countries (Belgium, France and Switzerland) to better understand their reporting practices' status and readiness. We have used the Basel Accord IV requirements, 2017, describing the operational risk disclosures that must be found in banks' annual reports by 2022.

To have a structured approach, we converted the regulatory requirements into five dimensions: design, governance, measurement, reporting and response (see *Operational risk management disclosure dimensions*). For each dimension, we analysed the information publicly available to measure the information quality. To assess the quality of the information provided, we created an aggregated index scoring from 1 to 10, considering the "width" and the "depth" of the information communicated. Ten is the highest score, one the lowest.

Governance scores well

We found encouraging results from our index for the information communicated about the governance of operational risk. The average score is 6,7/10, and more than half of the banks have 9 and 10. This shows that details about the roles, responsibilities and how the interactions with other controlling functions are organised are clearly described in

> **Companies with good performance provide higher-quality risk disclosure**

reporting (see *Governance index*).

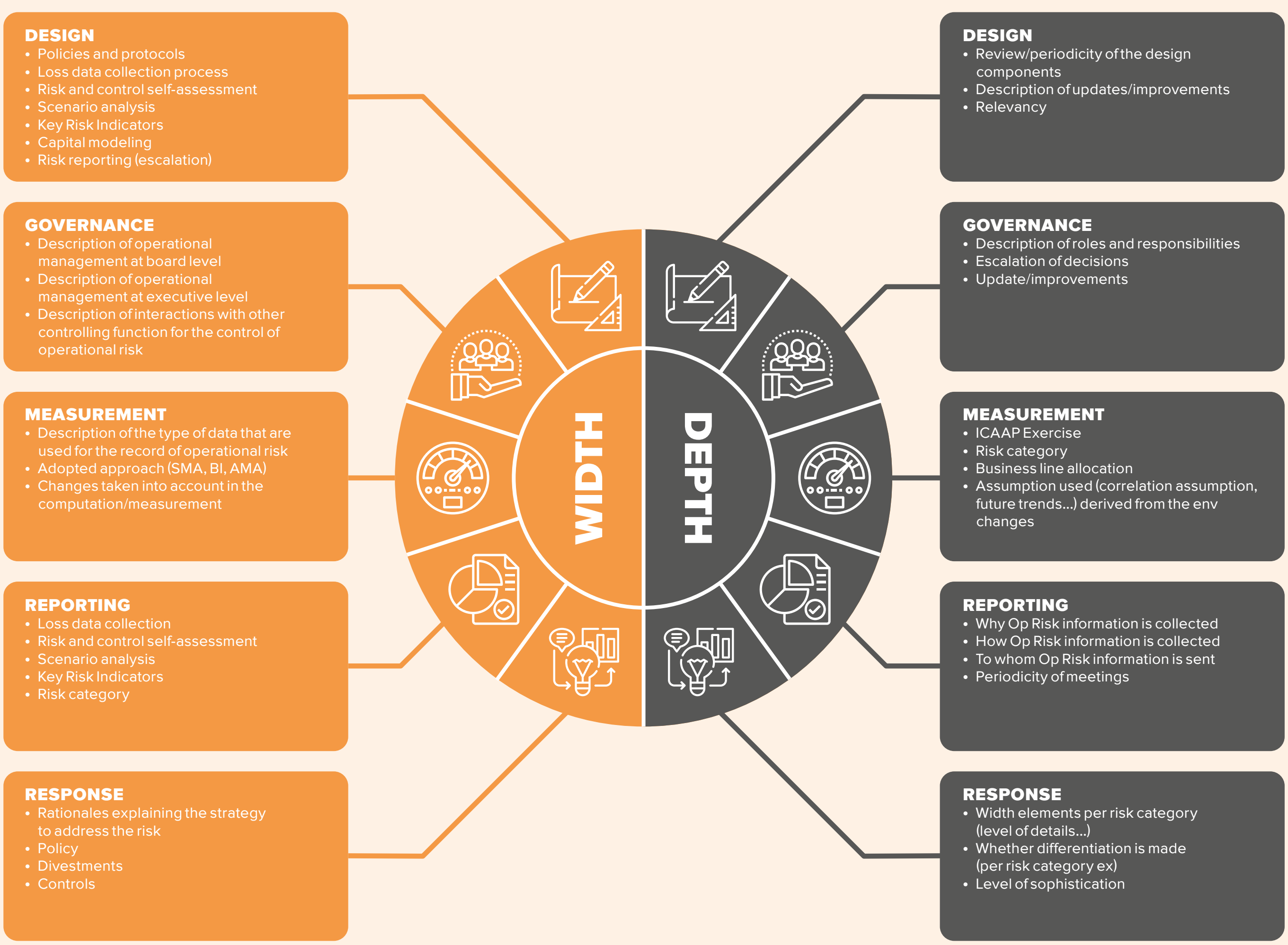
While the average score is slightly below 5, we observe that the results from design and measurement are promising. The dispersion of these dimensions' scores is relatively high. It means that the gap between banks is high, but results can be reached by implementing some best practices that can be identified in almost 30 per cent of the banks which have scores of 8 and 9. Banks with the highest measurement and design scores are those communicating about specific operational risk measurement per risk category and per business line, and those making clear statements about updates, review cycles or improvements of their operational risk policies and practices (see *Measurement & design index*).

The two other dimensions are very disappointing. For the response dimension, a third of the banks provide a rationale explaining the strategy to address the risks, and only 11 per cent differentiate their risk response per risk type.

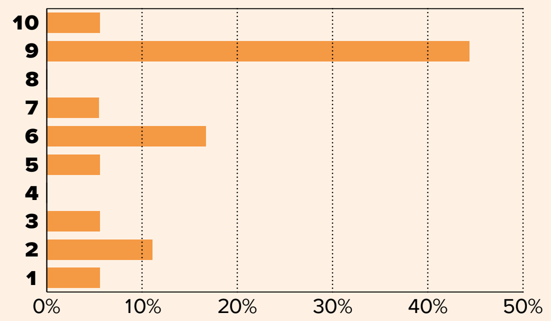
The most exciting aspect of the response dimension is that we found a strong correlation with two other dimensions: reporting and measurement. Specifically, if risk managers improve the response dimension, it will have a positive effect on reporting and measurement in a kind of a snowball effect. This shows where risk managers have to take action to maximise the quality of their disclosures. We have, therefore, clearly identified the most influential dimension in terms of leverage on the different aspects of the operational risk disclosures (see *Response quality index*).

> **Banks with the highest measurement and design scores are those communicating about specific operational risk measurement per risk category and per business line**

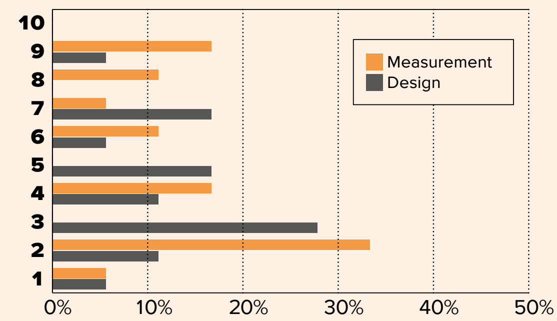
OPERATIONAL RISK MANAGEMENT DISCLOSURE DIMENSIONS



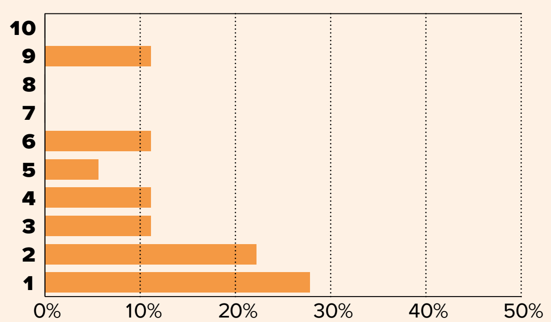
GOVERNANCE INDEX



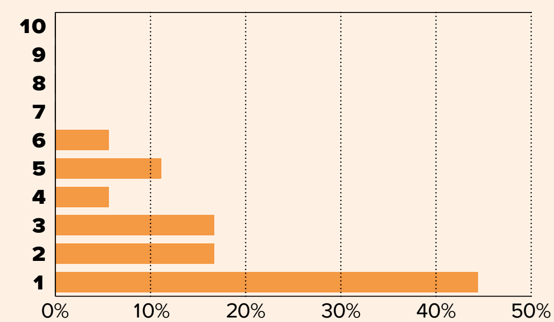
MEASUREMENT & DESIGN INDEX



RESPONSE QUALITY INDEX



REPORTING QUALITY INDEX



Focusing on what

The most worrying dimension is reporting with an average index score of 2,3 and a very low dispersion, meaning that the index scores are stuck at the bottom. No one bank has a score above 6. The banks do not inform the disclosures' readers about the type of information collected, with whom the information is shared and how often this information is discussed within the organisation. We found this very surprising, especially knowing that roles, responsibilities and interactions with other functions are clearly described in the governance section of disclosures. Not only focusing on the "whom" but also describing the "what" could significantly influence the quality of the disclosures (see *Reporting quality index*).

The scores provided need to be put into perspective: to make these measurements, we have used criteria that will need be implemented by 2022, and if some scores are disappointing, we have identified where the current weaknesses are and how they can be improved by sharing practices through effective communication with the right information.

Banks who want to improve their operational risk management disclosures should first focus on the response aspects. Their development will have leverage on the other dimensions, especially on reporting and measurement, which need a nudge to improve their quality and readiness. Operational risk managers should not underestimate the impact that has on the quality of the disclosures. Improving the regulatory reporting will demonstrate their professionalism and the impact on the organisation, and provide confidence to the reader of these reports.

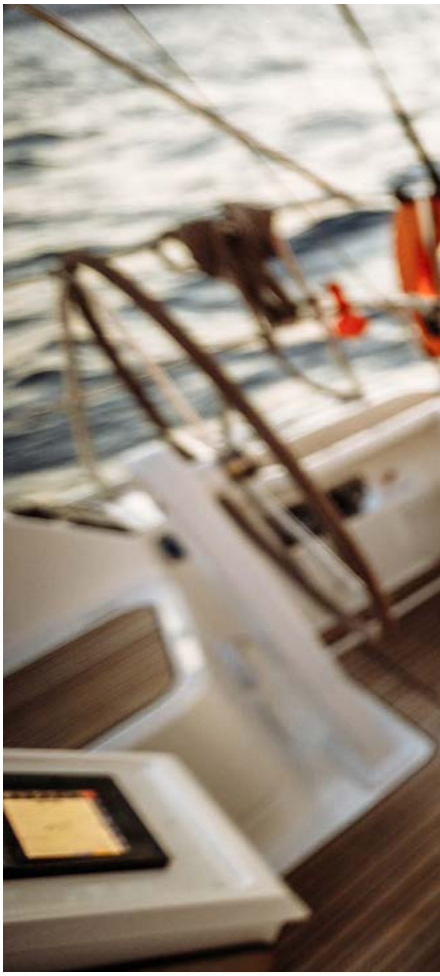
Camille Fradin is a Master's student in corporate finance at IESEG School of Management and David Lannoy is associate director risk training and practices at Chapelle Consulting.

> Banks who want to improve their operational risk management disclosures should first focus on the response aspects

Guidance for sound practice

A series of papers on key aspects of operational risk aim to help improve best practice in risk appetite, risk culture and embedding risk

BY SARAH WINT



Although there is no one-size-fits-all approach to the management of operational risk, it is important that organisations benchmark and improve their practice on a regular basis. That is why a series of papers by the Institute of Operational Risk (IOR) – part of the IRM group – aims to provide practical guidance on a range of important topics that span the discipline of operational risk management.

Broadly, the objectives of these papers – which include guidance on risk appetite, culture and embedding risk management – include explaining how to design and implement a sound (robust and effective) operational risk management framework (ORMF), as well as demonstrating the value of operational risk management. The guidance papers also reflect the experiences of risk professionals and provide insight into the challenges involved in developing ORMFs.

> **The guidance papers reflect the experiences of risk professionals and provide insight into the challenges involved in developing operational risk management frameworks**

Risk appetite

The starting point of the *Operational risk appetite and tolerance operational risk: sound practice guidance* is IRM's definition of risk appetite: "The amount and type of risk that an organisation is willing to take in order to meet their strategic objectives".

The guidance notes that in many firms the current practice is for the board to consider risk appetite

statements drafted by the senior management. This approach often reflects the complex nature of many financial organisations. Unfortunately, it says, this practice can result in anchoring and is open to challenge by supervisory authorities and during board effectiveness reviews when it could be argued that boards do not have a wide enough choice of recommendations and are too guided by the work of senior management.

"IOR feels that where possible boards should be more involved in the process of setting risk appetite and should be able to demonstrate a more active role in thinking about and setting risk appetite, albeit guided by the relevant experts," says the guidance.

The guidance suggests that to improve board engagement an alternative approach can be useful: for operational risk practitioners to limit themselves to designing the process for determining operational risk appetite. This might include providing a template that the board can use or facilitating discussions by the board. But it would not include providing specific recommendations about the appropriate level of operational risk appetite.

"A further advantage of this alternative approach is that directors (whether executive or non-executive) have the broadest possible strategic perspective and should have a clear understanding of stakeholder risk preferences," says the guidance. "As a result, they can ensure that the organisation's operational risk appetite is aligned with its strategic objectives while meeting the needs of stakeholders."

Culture

Risk culture: operational risk sound practice guidance focuses on an increasingly important area of risk management practice. "An organisation's culture, and by extension its risk culture, is both a

"Boards should be more involved in the process of setting risk appetite and should be able to demonstrate a more active role in thinking about and setting risk appetite

> An organisation's culture, and by extension its risk culture, is both a source of strength and weakness when it comes to the management of operational risk

source of strength and weakness when it comes to the management of operational risk," says the guidance.

An appropriate risk culture can ensure that staff accept the importance of effective operational risk management and behave in a manner consistent with the organisation's operational risk policies, procedures and appetite. Inappropriate risk culture can be both a cause of operational risk events and a mechanism for intensifying their impact, it says.

The guidance explains how risk culture may be identified, assessed and controlled to help reduce the frequency and severity of operational risk events. It emphasises that there is no one optimal risk culture, nor are there universal characteristics of strong or weak risk cultures. Yet while there may be many cultures and risk cultures in large organisations, the report provides guidance on the effective management of risk culture, as part of a robust ORMF.

SWORD GRC

We are grateful to Sword GRC for kindly sponsoring the series and to Simon Ashby, FIOR, Professor of Financial Services, Vlerick Business School for his valuable work writing these SPG's.

Embedding risk management

Embedding an operational risk management framework: operational risk sound practice guidance notes that most organisations have in place some form of ORMF. Such a framework typically includes tools for the identification, assessment, monitoring and control of operational risks. Often these will be documented in policies and procedure manuals and supported by a formal governance infrastructure, as well as informal elements like the organisation's risk culture.

"The presence of an ORMF is a necessary part of effective operational risk management, but it is rarely adequate in isolation," says the guidance. "Organisations must ensure that the ORMF is embedded in day-to-day business activities and decisions. The aim is to implement an ORMF that brings benefits to the organisation. Benefits that the users of the framework recognise as valuable, both to the organisation and to themselves in the performance of their duties."

Since the term embedding is open to interpretation and can mean different things to different people, the guidance explores what it means from an operational risk management perspective. In addition, the guidance examines the critical success factors involved in achieving an embedded ORMF, how fRamework components and activities can be integrated and aligned to businesses processes to maximise their net benefit and how embeddedness can be assessed. ER

IRM members can download the papers for free at: bit.ly/2L4DR4U

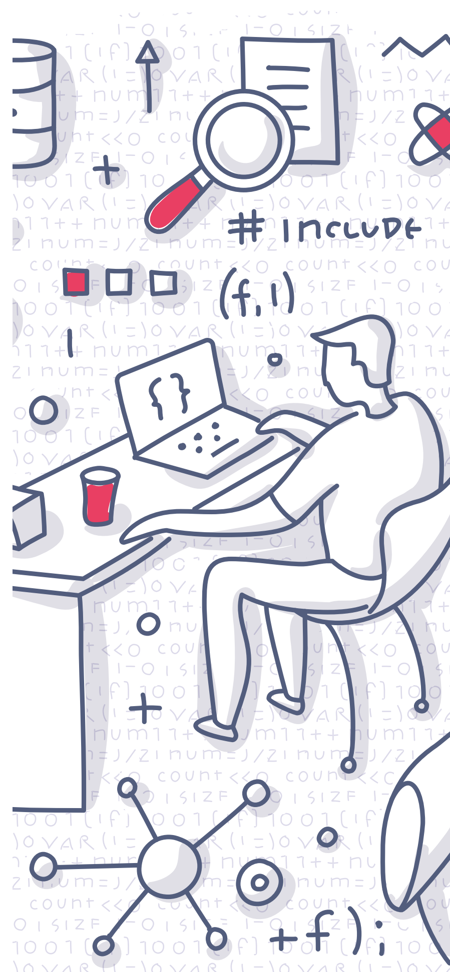
> The presence of an ORMF is a necessary part of effective operational risk management, but it is rarely adequate in isolation

Feature CASE STUDY

Hacking risk

Emerging risks are difficult to identify and predict, but a hackathon can draw on the power of crowd-sourcing ideas to provide fresh insights

BY KEITH SMITH



For many, the importance of emerging risk started with a third-order news story about a virus outbreak in a Chinese food market just over a year ago. For others, pandemics, the rise in obesity, the dramatic advances in artificial intelligence (AI), the impact of climate change and many other emerging risks have been in focus for years.

Before COVID-19, a detailed explanation of how emerging risks could rise from nowhere with potentially devastating consequences, or yes, produce substantive opportunities, would have been required. Pre-COVID, two of the popular vehicles for such discussion on emerging risks were AI and climate change. AI taps into society's fear of machines ruling the world and is rich in both threat and opportunity in seemingly equal measure. Climate change on the other hand remains one of the biggest recognised threats to global society. And while global discussions are dominated by pandemics at the moment, these other emerging risks remain very real and very important to many.

One company has been working on such emerging risks for some time. AIR Worldwide is one of the world's leading event-modelling organisations. That is to say they source and analyse masses of data to deliver important insights into how serious risk events might unfold. The company employs many skilled mathematicians and data scientists who, with sophisticated computer models, use

> **While the definition of emerging risk is contested, the idea that analyses of emerging risks are characterised by a lack of data is not**

data to provide important insight into how multibillion dollar catastrophes like hurricanes, wildfires and pandemics may impact societies.

While the definition of emerging risk is contested, the idea that analyses of emerging risks are characterised by a lack of data is not. The world did not have reams of data on how COVID-19 would behave, because the virus was new. We can philosophise about how society will change when the sea levels rise, but we don't have the data records yet to show how people will adapt to this threat. So, deprived of established data sets for traditional modelling, what are the options?

Seeking data

It is rarely true to say there is no data when talking about global emerging risk matters; it is just that the data that is available is generally sparse, unreliable, sometimes indirectly linked to the subject and uncorrelated. Modelling relies on establishing sound correlation between data sets where each new data source adds a new dimension of understanding and provides a degree of confidence that the model is, within certain bounds, correct. Scenarios, where possible futures are constructed based on projections of people's understanding, are good tools for assembling a range of plausible outcomes, even when the data is poor. With scenarios, data scientists and modellers can rationalise what data sets may be useful to quantify those scenarios, and they can go looking for the data.

Sometimes, there is more useful data available than people think – often hidden in plain sight. A data proxy, for example, is where a data set may not have an obvious direct connection to the subject matter, but on deeper inspection, it is found to have an indirect connection. An example of a proxy would be the changing nature of sea life seen in

> **Modelling relies on establishing sound correlation between data sets**

> Hackathons are generally known for their success in the field of software innovations and are essentially crowd-sourcing events

Image credit: estherpoon / Shutterstock.com

Above: The scientific view has changed to back the crowd-sourced view of many non-scientists that masks can provide some protection against the spread of the virus.

coastal waters. A single sighting of a species considered rare to UK waters may be a chance event, but data showing a sustained growth in such sightings is a clear indication of climate change.

Wisdom of crowds

Data scientists and social scientists have in the past noticed that while individual expert opinion may be mixed and unclear, the collected action of people groups can be telling. Even groups that may not have the kind of background and training that would indicate subject expertise can be insightful. A good example of this would be mask wearing in relation to COVID-19. Early in the UK's first wave, the government were citing expert opinion that wearing masks was not justified by the science, yet many people took to wearing masks anyway. Now it seems the scientific view has changed to back the crowd-sourced view of many non-scientists that masks can provide some protection against the spread of the virus.

Now this last point is very interesting because it gives rise to an important question. If data does exist for emerging risks – data for which the correlation has not been established – or proxy data which is useful, but not appreciated for its relevance yet, is there a mechanism by which crowd sourcing of ideas and knowledge may allow this data and these unseen connections to be surfaced?

A hackathon experiment

With this question, context and background, AIR Worldwide decided to run an experiment. Hackathons are generally known for their success in the field of software innovations and are essentially crowd-sourcing events. In the IT world, self-selecting groups of people with a variety of skills, either acting as individuals or in teams, tackle published software challenges. Little or no guidance is given, so participants follow their own paths, providing multiple views of the problem and sometimes yielding many promising solutions. Could this concept be of value in quantifying emerging risks?

The sponsoring organisation provides the platform, seeds the research questions, sources some seed data and in traditional hackathons, provides sustenance. AIR Worldwide was ready to provide all this, but then lockdown and social distancing became the new norm, forcing AIR to reshape their project as an online hackathon experiment.

Online format

The effect of climate change was tabled as the first subject to try in this emerging risk management version of the hackathon. Teams and individuals were drawn from universities and small companies with a flair for originality.

As online meetings can be more intense than meetings where people gather in a room, the event was held as a half-day event, with short online sessions and substantial periods when people could drop the connection and focus on problem solving. At the end of the event, a short feedback session was held, so everyone left with a rich sense of participation, but also with the feedback of others on how they had tackled the problem in their own way.

As the event was short, people were given five further days to

HOW TO RUN A RISK HACKATHON

- The sponsoring organisation needs to be all in, commit resources, be on hand to answer questions and above all, always be authentic in dealing with the participants. AIR invested with time and resources from a number of people including very senior people from the very beginning and right through to the end. This commitment and the authenticity in each engagement was one of the factors that led to the success of this experiment.
- Keeping the energy up in such events is important. People engage with events that progress quickly and with energy
- Have a range of questions so people can play to their skills; some may want to analyse existing data, some may want to source data and some may want to innovate on methodology
- Don't overcomplicate the research questions. Keep it simple and relatively broad, such as 'How will companies be held liable for their contribution to climate change?'
- Keep the sessions short. At the kick-off meeting, the sponsoring organisation should quickly introduce the company and the task before moving to allow participant teams to introduce themselves
- Get informal feedback on what has been achieved at the end, but don't ask for a 'Presentation'. Some people will see this as a requirement for a polished presentation, and the research time will be lost in producing quality materials. In this experiment, participants had five days to submit a presentation after the event
- Allow for people to form teams, act as individuals and importantly, offer those that ask for help to form teams. Some people want to use the event as a chance to work with people and fresh ideas that they do not see in their own circles
- Promote the event early, widely and with passion. Also consider the audience you are aiming at. If its university students, avoid exam season

What to avoid?

- Do not over-constrain the ideas that can be tried at the event. This will stifle innovation
- Do not try to impose tough contractual limitations on sharing. This needs to be the equivalent of 'open source'
- Don't underinvest in organising the event. Participants are there for the experience and want to participate in a quality-first event
- Don't see it as the sponsoring organisation's event; see it as the participants' event. That way, everyone, including the sponsoring organisation, benefits

> The people involved were really able to showcase their talent, and this was one of the success factors that made this experiment worth running

rationalise their work into a short presentation, formatted however they wished and submitted as a follow-up to the event. These submissions were looked at in detail through a judging process so that the most innovative and interesting could be shared and judged. By way of encouragement to participate and submit a presentation, AIR provided a generous cash prize for each hackathon event and a further cash prize for the overall best submission across the three events as judged by an independent and knowledgeable panel: Dr Trevor Maynard, head of innovation at Lloyd's; Carolyn Williams, IRM director of corporate relations; and Andrew Blancher, director at Verisk ISO.

Results

The online medium was definitely challenging (not impossible) with participants reporting that the event experience was positive. As for results, the experiment was small scale, but indications were that the concept of emerging risk hackathons can surface interesting data and innovative ways to create fresh insight into emerging risks. Moreover, the method allowed some great new talent to be identified – talent that AIR Worldwide and others may now invest in.

In a world where knowledge and data is king, identifying, recruiting and keeping the most highly talented individuals is a recognised platform for building a world-class organisation. Exams and qualifications are useful, interviews and references have their place, but when it comes to true talent, this can sometimes be missed by such methods. By participating in these events, the people involved were really able to showcase their talent, and this was one of the success factors that made this experiment worth running. Over the course of the three events, not only did we test the concept of hackathons being applied to emerging risk but we also learnt a few things about running such events, which will be of undoubted value in the future.

Keith Smith, CFIRM, is a specialist in emerging risk, risk and decision-making under uncertainty at Riskcovered Limited.

Integrating risk and resilience

Guidance for the utilities sector aims to help businesses at all levels of risk maturity improve their enterprise risk and resilience management, says Nigel Toms

It is clear that organisational success in the increasingly complex world of the future is only going to come from integrating risk management with resilience approaches.

I have long been a champion of unified risk-and-resilience approaches and have been applying these here at Watercare successfully for a number of years. The perfect opportunity arose to highlight its importance to large organisations when I was invited to become the technical author of the recently published *PAS 60518:2020 Developing and implementing enterprise risk and resilience management (ERRM) in utilities standard*.

The standard has been specifically written for electricity and gas providers, including generation, transmission, distribution and supply organisations, as well as water and wastewater providers, including supply, treatment, transmission and network operation organisations.

Integrating risk

The standard provides a process for integrating risk and associated resilience for utilities, regardless of where they are on their risk management journeys. Published in July 2020 by the British Standards Institution (BSI) and sponsored by the Dubai Electricity and Water Authority (DEWA), this PAS is designed to lead organisations through the process of developing risk management capability and building adaptive capacity.

Resilience has often been viewed as the ability to recover quickly from difficulties but is now seen as the ability to survive a crisis and thrive in a world of uncertainty. PAS 60518:2020 provides guidance on developing and implementing enterprise risk and resilience management (ERRM). It includes integrating business continuity and incident management plans, improving staff capabilities and extending supporting networks to respond to extreme events.

Key areas of focus

The key focus areas for ERRM include:

- Maximising organisational capability
- Informing risk management, including areas where more risk could be accepted
- Identifying areas where business continuity and incident management plans are required
- Aiding decisions on capital investment to increase organisational resistance
- Improving resilience, including response, and supporting resource capabilities

Effective risk and resilience practices take time to build and need to be driven by the leadership team within organisations. The leadership team can and should build resilience thinking into the company's culture, by demonstrating their own personal commitment to it. This includes being active in the development and exercise of plans and having processes to maintain unity-of-command when senior executives are away.

Risk and resilience is a continuing journey, and PAS 60518:2020 is packed with information, templates and practical examples that together provide a path to ordered development and taking utilities on a structured journey to develop and improve their organisational resilience.

THIS PAS USES AN INTEGRATED ERRM MODEL

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For more information on PAS 60518, visit: bit.ly/36mrEk0. Nigel Toms is chief financial officer at Watercare Services Limited and author of standard PAS 60518 on enterprise risk and resilience management (ERRM) for utilities.

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Fire together, wire together

The marriage of languages and the science of memory offers insights into the role of forgetting in learning

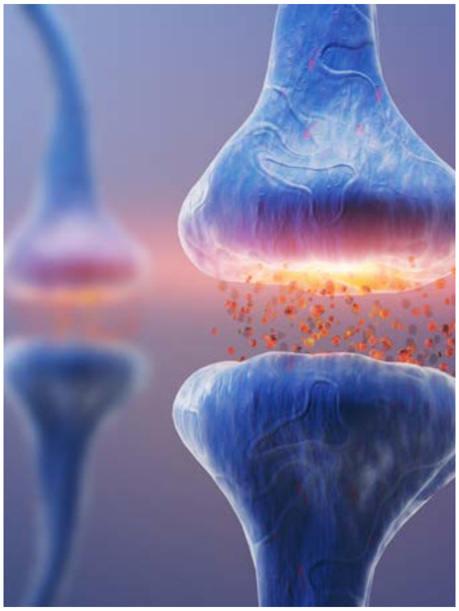
An unintended consequence of furloughing many workers during the various UK lockdowns has been to make them time rich. Many have turned, or returned, to hobbies such as drawing, painting, reading, music making and – the favourite of the *Enterprise risk* office – learning languages.

For anyone who has not attempted a foreign language since school, today's learning landscape looks quite different. Gone are the tables of verb conjugations, the boxes of CDs – or even cassettes – and the notion that you might be able to learn how to speak by spending time with a teacher with 30 or so other students in a classroom setting.

Instead, YouTube is alive with polyglots providing the top five things that those rarefied creatures do to learn languages quickly, effectively and permanently. Online platforms such as italki, for instance, link native language teachers with eager language learners at sometimes surprisingly affordable prices. The non-profit platform Speechling enables would-be linguists to record themselves repeating sentences in their chosen languages and receive feedback within 24 hours. And the free flashcard app Anki gives students the ability to create memorable multi-media memory aids in any language – it's also popular with medics, lawyers and perhaps some risk managers with exams to cram for.

Embedded

None of this should be surprising given the move to digital learning that most organisations have taken – IRM included. But what makes such programs compelling is their willingness to draw on the latest research in cognitive science to help people learn. The technologies are embedding new philosophies of learning as standard.



> The technologies are embedding new philosophies of learning as standard

One of the main problems in language learning is moving knowledge from so-called short-term memory into long-term memory. This is particularly challenging in language learning because words do not operate on the same plane as facts. We can learn, for example, that *osara* is Japanese for plate or dish. But words for emotional and descriptive states are personal and often come with a rich array of associations. These need to be built up and nurtured in the foreign language if our vocabulary is to touch other people in a meaningful way.

Gabriel Wyner, author of *Fluent forever*, has explained that digital flashcard systems such as Anki aim to tackle this problem in two ways. First, they adopt the assumptions of recent memory studies that show longer-term memory depends on the creation of patterns of synapses in the brain that are glued and strengthened when they activate simultaneously. This draws on the pithy statement by the neuroscientist Donald Hebb: "Neurons that fire together wire together."

But it is now also understood that for those patterns to cement they need significant downtime between bouts of activity. Each flashcard is presented in increasingly longer intervals called spaced repetition – ideally just before you are about to forget. Since the brain has to work harder to make the connection – osara/dish – that effort is part of the way the information goes into long-term memory.

Richer

Second, the richer the card is in sound files, images and guessing games, the stronger and deeper our associations with that word will be – making our emotional connection with the language firmer and our ability to speak it meaningfully more likely. Traditional cramming – especially of bland verb tables – won't cut it. The information is just too thin in associations, nor have learners given themselves that opportunity to almost forget, which is essential if long-term learning is to occur.

When the vaccines finally arrive, we should all be released from the new tyranny of such hobbies. The experience of this new learning, on the other hand, is something that will be worth remembering.