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Emerging risks



Emerging risks

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We are facing a crisis on top of a crisis.

Kristalina Georgieva,
MD of the International Monetary
Fund (IMF)

April 2022

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She was referring to the combined impacts of the COVID-19 pandemic, plus the Russia/Ukraine crisis, and accompanied her statement with a sobering forecast on the lack of global growth and a declaration that rising inflation is a “clear and present danger”.

As the year continued many of the risks on organization’s lists have crystalized, and in the face of such change, there has never been a better time to reconsider the risk landscape and the risks and opportunities on the table.

Today, future-seeking leaders accept that risk has become a mainstream element of business and will likely remain so for the balance of their careers.



The frequency and simultaneous occurrence of high-impact risks require both enhanced day-to-day management and agile planning for a “portfolio” of risks, supporting a culture of adaptability to incorporate new information that arrives daily or hourly, being ready to act decisively when events happen.

It is also important to not just focus on the risks, but to keep an eye open for the opportunities. After its successful launch in 2021, the James Webb Space Telescope sent back the first awe inspiring views of the cosmos that will help us understand how our universe works. In 2022, several groups reported the first successful applications of AI (Artificial Intelligence) to identify novel antibiotic drugs, which will improve life expectancy and quality of life. And in December, the much delayed Convention on Biological Diversity was held in Montreal, which will set a course for nature recovery from now until 2050 – supporting understanding on the value of nature.

Over the last year, the Emerging Risks hub has been supporting thinking in this space with our industry practices and their clients; offering a challenge perspective off positive and negative futures that bring stakeholders together to discuss risks and their interconnections through scenarios. Key examples of this are outlined in this year’s Annual Review, and include the launch of the Airport Risk Index with the Centre for Risk Studies at the Judge Business School, University of Cambridge, and the release of the first report with Lloyd’s to explore supply chain vulnerabilities in 3 key industries.

In 2023 we will be rerunning the emerging risk survey launched at our 15-year anniversary conference, and continuing to build out thinking around scenarios and futures. This will be supported by Dr. Jen Daffron who will focus on these two areas.

Lucy Stanbrough

Head of Emerging Risks and
Business Engagement

How prepared is your organisation against civil unrest and ‘crisis on top of crisis’?

According to *The Times*¹, police forces in the U.K. were planning for disorder in the summer of 2022 amid fears that the cost-of-living crisis and other pressures could trigger civil unrest, and 2023 started with strikes from key industries from rail workers to nurses.

Political risks can emerge rapidly in societies that have enjoyed stable business conditions for years, and since the Arab Spring of 2010, we have seen anti-austerity riots (2011) and human rights protests (2020) in Greece, the notable ‘yellow jacket’ campaigns in France (2018), the Chilean social inequality demonstrations (2019), rallies against COVID-19 restrictions in Italy (2020) and, in 2022, the youth-led mass protest movement over Sri Lanka’s worst-ever economic crisis. The speed and scale of these protests have, in some cases, been breath-taking, often driven by the largely unregulated nature of social media that allows misinformation to spread unchecked, providing a platform for conspiracy theorists and an outlet for resentments.

The final straw?

With significant economic uncertainty as the spectre of a global recession looms large, supply chain volatility caused by geopolitical uncertainty, coupled with spiralling costs of basic commodities and energy prices continuing to rise, adding one or a combination of further events may spark highly flammable societal conditions into full-blown blazes.

These events could include any one, or a combination, of the following:

- Industrial action coming to a head, paralysing the country as unions jockey for public and political sympathy
- Supply conditions for critical utilities, such as power or water, worsening, resulting in restrictions or blackouts
- Public confidence in policing falling to an all-time low as a result of further scandals or mishandled events
- Delay or inaction by the Government resulting in loss of support and confidence
- A cyberattack on the voting systems provoking a loss of confidence in the democratic process, as recently suggested in relation to the U.K. Conservative leader voting process²

¹ <https://www.thetimes.co.uk/article/police-brace-for-unrest-over-cost-of-living-crisis-93d97bm8k>

² <https://www.reuters.com/world/uk/britains-conservative-party-voting-next-pm-delayed-after-hacking-alert-telegraph-2022-08-02/>

- Geopolitical threats, such as E.U. fragmentation, destabilising global economy further; Hungary or other E.U. countries aligning to Russia thus weakening the effect of global sanctions; Chinese aggression towards Taiwan intensifying, resulting in new trade wars and China leveraging supply continuity against the West.

How could civil unrest affect your organisation?

It is, of course, difficult to predict exactly what could or would happen, as much will depend on the extent and severity of any unrest. Rather than any one 'doomsday', we should instead expect gradually increasing pressure as societal frustrations result in more lines being crossed. Organisations should be prepared for any, some, or all of the following:

- Physical damage to assets following targeted attacks or general rioting
- Depending how your organisation is perceived, threats to employees with the potential for physical violence
- Disruption to operations both direct (following action against premises or business activity) and indirect (following action against a critical supplier, for example)
- Negative messaging against a company directly (if perceived to be profiting from/contributing to economic distress, for example, energy utilities), or by association, with consequent reputational damage
- Pressure on revenues/profits from various stakeholders, for example, activist groups, media, regulators, government
- Targeted cyberattacks to punish/deter companies by socially motivated activists but also increased threat from organised criminal groups as they see organisations being distracted by civil unrest and leaving themselves exposed in terms of IT protection
- Your own employees may identify or sympathise with the civil unrest issues and disengage with the organisation
- Increasing regulatory pressure on companies to react to societal pressures, for example, energy companies becoming subject to additional windfall taxes, revising of costing models, and the like
- Supply chain pressures leading to disruption at organisational level
- Lending conditions becoming stricter as financial institutions take a harder stance on risk affecting cashflow
- Claims settlements becoming subject to delays or disputes as insurer operations are disrupted, resulting in inability to settle claims within agreed time limits
- The risk of litigation increasing as claims are disputed
- Unrest leading to loss of confidence in FTSE and consequent share value falls
- Increasing likelihood of prolonged recession, either at a national or global level, leading to premature foreclosure of businesses
- Civil disorder leading to withdrawal or reduction in public services affecting employees, suppliers and customers.



While all of the above may sound like apocalyptic scenarios it is interesting to note the U.K. National Risk Register³ includes “widespread public disorder” defined as a low to mid-level risk, both in terms of probability (5 to 25 in 500) and impact, with potential economic costs ranging from £10 million to £100 million. That said, this risk grading featured in the 2020 version of the register and an updated iteration may look markedly different given the change in prevailing conditions. These scenarios may need to be calibrated and stretched further, with UK Hospitality warning⁴ the wave of rail strikes over the festive period could cost the hospitality industry an estimated £1.5b a day.

Political and other risks can emerge rapidly, even in societies that have enjoyed stable business conditions for years. This means simple trend assessments or data analysis are inadequate in gauging the potential financial impact and why getting a second set of eyes can stretch thinking. The WTW Political Risk Survey 2022, conducted by our partner Oxford Analytica pointed out how political violence losses fell sharply in 2022, which could reflect periods of lockdown during which social unrest declined. Relaxing lockdown measures could result in a surge, which could test those resilience plans and the relative quiet.

³ <https://lordslibrary.parliament.uk/national-risk-register-preparing-for-national-emergencies/>

⁴ https://www.thecaterer.com/news/rail-strike-hospitality-cost?utm_source=catererwebsite&utm_medium=reviewoftheyear

Building resilience to civil unrest

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Today's organisations are having to factor uncertainty into their planning process. The focus shouldn't be on trying to pinpoint the next crisis, or crises, but instead to build resilience into their DNA

Frederick Gentile, Director of Risk Engagement, WTW

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There will be enormous reliance on the national capabilities in extreme scenarios, and realistically organisations can only work towards mitigating the impacts of such events within reason. Nevertheless, there are actions organisations can take now to embolden their stance and boost their preparedness for the eventuality of civil unrest:

- **Review risk registers** to ensure civil unrest and associated risks are included and regularly evaluated.
- **Scan the horizon** by introducing measures to baseline and monitor societal 'temperature', such as public mood, media coverage, social media sentiment towards your organisation, activist reactions, and identify early episodes of societal disorder, including protests.
- **Update business continuity plans**, IT disaster recovery plans, strategies to cope with staff shortages, and any other contingency plans, and ensure these are shared and understood by key stakeholders.
- **Quantify operational factors**, such as stock levels, staff deployments, supplier call-off and the like, assessing how each would be affected in the event of serious disruption.
- **Ensure your crisis response structure is clear** and ready to be activated at short notice.
- **Establish communication strategies**, including with media and social media, as well as response and monitoring arrangements.
- **Consider scenario planning with executive teams**, so they have ready answers to the questions of, "If civil unrest happened tomorrow, what would you do?", allowing for input from each of the organisation's key functions in this process. Constructing realistic and relevant scenarios is one of the practical outcomes of our WTW geopolitical risk programme⁵, leveraging insights from our network of advisors.
- **Assess standing security arrangements** and potential additional call-off measures.
- **Review your insurance provisions** to understand exactly what is and isn't covered and where the gaps may need addressing ahead of potential losses.

⁵ <https://www.wtwco.com/en-GB/News/2022/11/wtw-launches-geopolitical-risk-research-programme-to-bring-together-world-experts-and-build>

- Liaise with lenders to assess the scope for cashflow facility, should it be required.
- Communicate your readiness for disruption with customers and suppliers, articulating your plans to keep the business on the front foot, even in the event of civil unrest or other crises. This might act a point of differentiation when compared with peers, allowing your organisation to pivot to opportunity more readily.

How can the business manoeuvre beyond box-ticking to true preparedness?

The last two years have taught us the 'new normal' is the 'never normal'. It's worth recalling that while pandemic flu was at the top of the U.K. risk register⁶, when that risk crystallised, the country was shown as under-prepared for COVID-19⁷.

This demonstrates how true preparedness is about evaluating, monitoring and acting on new risks, not simply acknowledging where risk exists and having only hypothetical responses that don't adequately reflect what's really required when crises strike.

Being ready for crises means ensuring your risk management framework (RMF) is both robust whilst being receptive to ever-changing exposures. Increasingly, these frameworks are required to metabolise how extraordinary events are becoming less theoretical and more day-to-day reality, and the WTW Research Network will continue to explore where science-based partnerships can support thinking.

⁶ <https://www.nao.org.uk/reports/the-governments-preparedness-for-the-covid-19-pandemic/>

⁷ <https://www.parliamentlive.tv/Event/Index/2105caa3-43bf-49e0-a19a-0b0b5adb9dcc>





Lessons from future-prepared firms

We are running out of risks to check off the list, with many of those risks that have sat on the top 10 lists of organisations crystallising over the last year, whether record setting droughts and floods¹, geopolitical tensions materialising² in Europe, or economic tensions fuelling protests³.

With a never-ending stream of change, companies must continuously innovate to stay ahead of the curve and manage risks effectively. A key part of this is staying alert and curious for signals of change – continuously reviewing assumptions around the risk landscape and exploring potential futures to ensure strategy is fit for purpose.

Something the Emerging Risks hub has been exploring with our WTW colleagues and clients over the last year.

While this may seem like an additional burden on top of an already full to-do list, there are benefits. Research suggests that future-prepared firms – who have invested in building corporate foresight units – outperform the average by a 33% higher profitability and by a 200% higher growth¹¹. While there is no one silver bullet framework, course to take or software that can be deployed to gain this magic badge of being a ‘future-prepared firm’, the research study found that foresight activities must be integrated with a firm’s strategic planning processes, innovation, and operational activities.

¹ <https://www.climateforesight.eu/articles/flood-and-drought-two-sides-of-the-same-coin/>

² <https://carnegieendowment.org/2022/12/08/economic-anger-dominated-global-protests-in-2022-pub-88587>

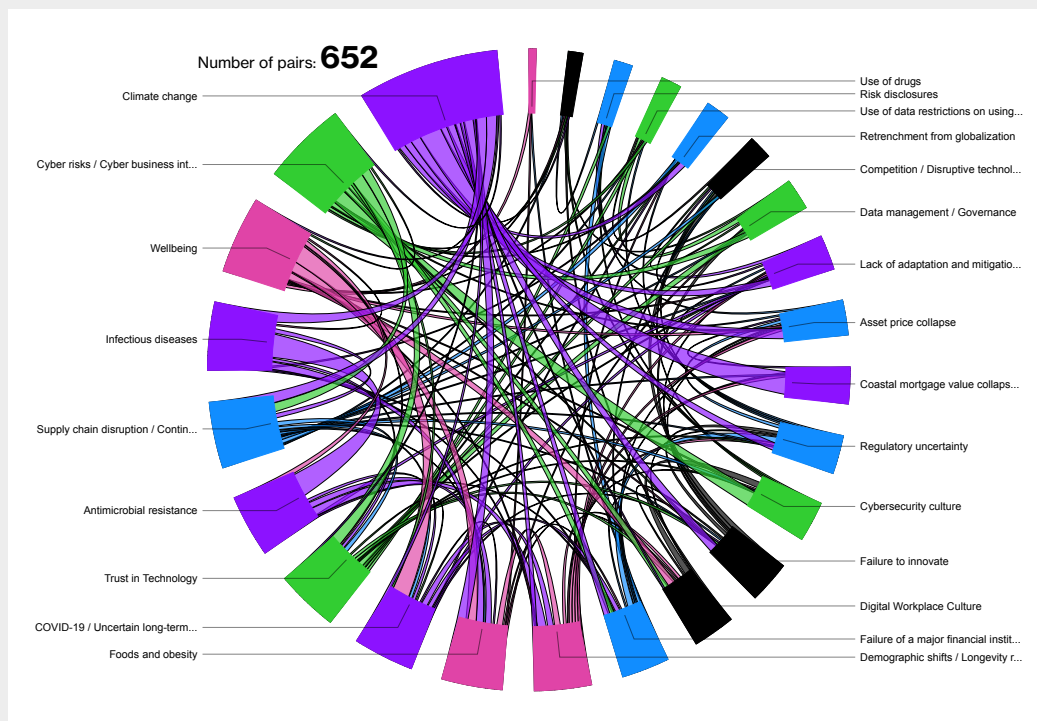
³ <https://www.sciencedirect.com/science/article/pii/S0040162517302287>

Changing landscapes

Horizon scanning, well-formed research questions, and not being afraid to challenge existing processes are all foundation blocks underpinning the transformation of information into action. Getting to grips with

all of these elements is essential as there's no shortage of change, and is why we will be running a new edition of the emerging risks survey launched over our 15 years anniversary conference to uncover the issues on our risk community's mind and challenge what might be missing:

Fig.1: **Horizon scanning**



Source: WTW Research Network

Challenge perspectives are essential to be awake to change. COVID-19 is already broadly viewed as being a once-in-a-lifetime or once-in-a-century pandemic, yet research by Metabiota estimates the annual probability of a pandemic on the scale of COVID-19 in any given year to be between 2.5-3.3 percent, which means a 47-57

percent chance of another global pandemic as deadly as COVID-19 in the next 25 years⁴. These numbers illustrate the importance of preparing immediately for future outbreaks, which Dame Kate Bingham, Chair of the Vaccine Taskforce in the UK recently warned was already slipping away⁵.

⁴ <https://www.cgdev.org/blog/the-next-pandemic-could-come-soon-and-be-deadlier>

⁵ <https://committees.parliament.uk/oralevidence/11977/html/>



Since the low probability of occurrence doesn't mean non-existent probability, it is becoming ever-more important to incorporate wild cards into your horizon scanning, foresight scenarios, and strategy testing. This includes both negatives such as the current questions around global food security and geopolitical uncertainty, and future utopias such as a fully climate positive future imagined in 'The Future We Choose' by Christiana Figueres and Tom Rivett-Carnac⁶.

Challenge perspectives should include a diverse range of backgrounds and people, as well as lenses of risk and opportunity to stress test thinking. A critical view is critical as it is rarely the event you've planned for the most that causes problems it's the unforeseen or unimagined.

The power of Once Upon a Time

Another tool is stories themselves. Science fiction has significantly influenced technological innovation and scientific research – whether serving as inspiration to colonise Mars in the case of Elon Musk, or painting a picture of future worlds like inventor Simon Lake, who became inspired by the idea of undersea travel after reading about Captain Nemo's adventures in 'Twenty Thousand Leagues Under the Sea'⁷.

Many technology companies employ the services of futurists and writers to share insight and describe worlds they – and their customers – can strive for. In 2015, Microsoft commissioned 'Future Visions', where contributing authors were inspired by inside access to leading-edge work, including in-person visits to Microsoft's research labs, to craft new works that predict the near-future of technology and examine its complex relationship to our core humanity⁸.

⁶ <https://www.weforum.org/agenda/2020/03/what-the-world-could-look-like-in-2050-if-we-do-everything-right-on-climate>

⁷ <https://www.bustle.com/p/11-real-life-inventions-inspired-by-science-fiction-novels-9090688>

⁸ <https://news.microsoft.com/futurevisions/>

Building a culture of risk

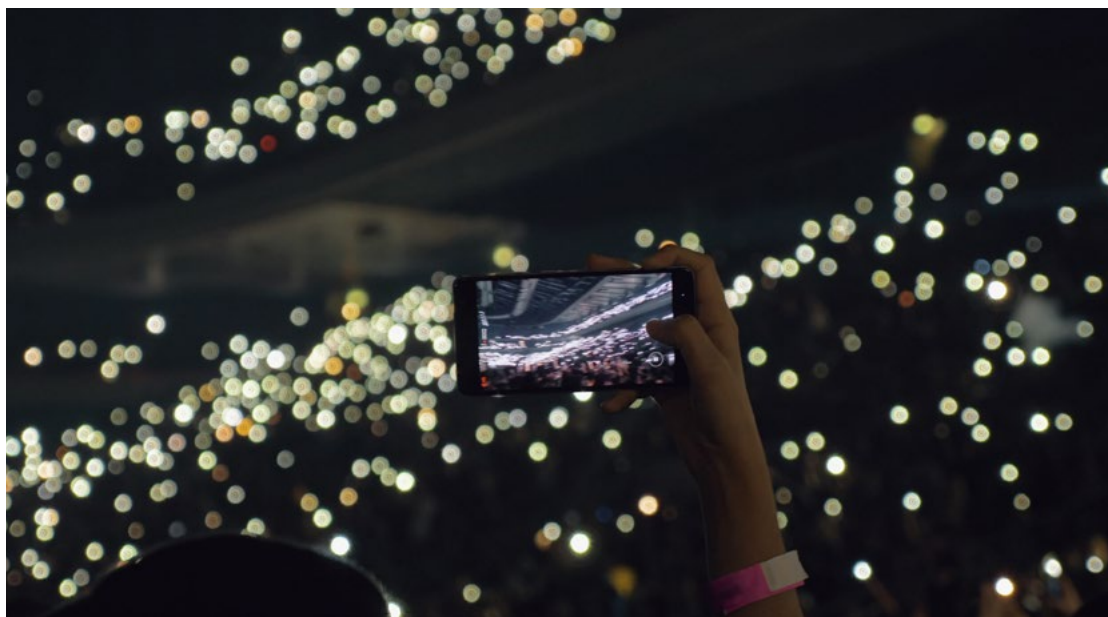
While being ‘right’ or targeting innovation and novelty are seen as highly desirable outputs from scenarios building exercises, the real value comes in transitioning from a ‘one and done’ process into an activity that ties together teams and strategy. Building a futures perspective into the culture and DNA of the company can foster mutual understanding among teams who bring different perspectives and responsibilities on what alternative futures could look like and potential disruptors you may face – that’s the real value-add that moves process into culture. For many organisations this is a key area where risk-facing colleagues have a central role to play.

In September 2022, the Research Network shared insights through WTW’s Training Academy in a session titled ‘Ready for the future: Are you prepared for tomorrow’s risk landscape?’ This forum was led by Lucy Stanbrough, Head of Emerging Risks and Frederick Gentile MBE, Director of Risk Engagement, and focussed on how

organisations can create robust and change-receptive Risk Management Frameworks (RMFs). The webinar also considered how to use scenarios to explore possible futures and examine why organisations should bring together perspectives from across business units to ensure RMFs are fit-for-purpose and the entire business is properly preparing for the future.

This is something we’ve been exploring in the WTW Research Network through the use of narrative storylines that weave together risks and trends that are often considered in isolation. We find the process of considering these futures helps move the narrative from “prepare for one”, to “prepare for all”.

In 2023, the emerging risks hub will be building on our horizon scanning and challenge perspectives with a new colleague – Dr Jennifer Daffron who will be joining us to focus on scenarios and futures.



Rethinking supply chains

Today's complex supply chains increase vulnerability to both natural perils and manmade threats, such as cyberattacks and geopolitical volatility, allowing risks to transfer between organisations, sectors and continents. There are also interesting trends and drivers at work, shifting the landscape and requiring new collaborations and thinking between stakeholders.

Over the past six months, the WTW Research Network has been working to support Lloyd's and their action leadership platform, Lloyd's Futureset¹ to explore how organisations are responding to supply chain challenges. The aim of the research has been centred on providing the insurance industry with a greater understanding of customer needs, identifying protection gaps and potential insurance solutions. This work has connected colleagues and perspectives from across WTW to surface the challenges our clients are facing, and at the end of 2022 Lloyd's and WTW co-launched the first report in a three-part collaboration.

¹ <https://www.lloyds.com/news-and-insights/futureset>

'From farm to fork' reports



<https://www.wtwco.com/en-gb/Insights/2023/01/rethinking-supply-chains-the-food-and-drink-industry>

From farm to fork

'From farm to fork: rethinking food and drink supply chains'² focuses on the critical challenges facing the food and drink industry due to the growing interconnectedness and complexity of global supply chains. The sector is one of the largest industries, with a global revenue of almost \$US 11 trillion (2021) that underpins global resilience and food security but faces a complex risk environment from natural perils to man made threats. There is

also further change on the horizon. As the world's population is forecasted to reach 10 billion by 2050, and demand expected to continue to grow significantly – land twice the size of India is expected to be needed by that time to support a 70% increase in food production. Meeting this need will require action across the value chain: eliminating pests and diseases; preventing loss in transport and distribution through poor storage; reducing food waste by retailers and consumers; and through supporting the transition to a low carbon economy.

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This Lloyd's Futureset and WTW Research Network report is part of our ongoing commitment to keeping pace with the changing risk landscape to help protect food and drink businesses and support their successful growth. We continue to deepen our understanding to drive improved supply chain resilience and to empower food and drink organisations' in optimising their risk protection in the face of ongoing volatility, and this work with Lloyd's brings an added perspective to this.

Sue Newton, Food and Drink Practice Leader GB, WTW

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Building resilience

The report outlines a practical roadmap based on increased collaboration between businesses, brokers and insurers, which identifies opportunities for the insurance industry to innovate in the protection it offers business as well as setting out how supply chain risk management technologies, including data capture and visualisation can help to improve resilience.

Rebekah Clement, Sustainability Director at Lloyd's said: "In today's global economy, the food and drink industry is no stranger to the effects of shifting geopolitics and economic uncertainty. It is arguably more important than ever that businesses ensure the safe and timely transportation of critical and often perishable products which maintain a level of balance for global food security.

Whilst insurance cover for supply chain risks does exist today, the findings in our research point to a lack of alignment between shifting

² <https://www.wtwco.com/en-GB/Insights/2022/11/rethinking-supply-chains-the-food-and-drink-industry>

key risk drivers for food and drink business and their current insurance cover. Uniquely positioned to respond, through initiatives like Lloyd's Futureset, the Lloyd's Lab and the our leadership of the Sustainable Markets Initiative Insurance Task Force, the Lloyd's market can further open lines of communication between food and drink businesses and their insurers and look to this research as roadmap for potential product innovation".

Key findings

- Behind this report is the data from over 275 risk, supply chain, and insurance practitioner interviews. These perspectives have provided real-life, practical insights into the challenges that companies across the food and drink sector are facing.
- In addition to these interviews, we have combined proprietary data and reports with a range of research and third-party analysis to develop insights that can help build common understanding between the industry and insurers
- The research identifies several key factors driving risk across food and drink supply chains, including economic pressures, demand changes, labour challenges, technology, transport, geopolitical and political risk, and climate change and sustainability, and highlights the opportunity for the insurance industry to develop new products to protect against the loss of Tier 2 suppliers, notifiable pests and diseases, transit delays and commodity price volatility.
- It also provides a view for food and drink companies looking to learn from their peers and challenge their own assumptions around risk. For example, there was a lack of alignment between companies' business-critical risks and the insurance cover they have purchased.

While 82% of businesses have at least some insurance for extreme weather impacts to their supply chain, less than a third (31%) believe that this is sufficient to address the risk to their operations"

Looking forwards

In 2023, together with Lloyd's Futureset, we will be focusing on the semiconductor industry and transportation and logistics. Semiconductors are produced through a complex global and interconnected value chain, and transportation and logistics underpins all supply chains regardless of industries – the movement of goods and components is central from production through to delivery.



Building resilience with WTW's Airport Risk Index

WTW and the University of Cambridge's Centre for Risk Studies have unveiled their revolutionary new Airport Risk Index (ARI)¹ designed to help owners and operators build operational resilience against the growing number of risks they face.

The ARI, which was three years in development with the WTW Research Network², was presented to more than 100 global airport executives at WTW's annual Airport Risk Community (ARC)³ conference in Lisbon in September.

The Index combines historical and predictive analysis to give airports the ability to interrogate their assumptions on risk. In an operating environment of non-stop change and competing demands on resources, it is easy to focus on the current issues that often dominate executive surveys, rather than the 'what if's'. The index sets out both likelihood and impact for the indexed threats to offer a perspective on what has always been possible and what we need to prepare for.

Features of the Airport Risk Index

In its present configuration, the ARI compares 110 of the world's busiest airports (by passenger volume) against 19 of the sector's most prominent threats, measuring the probability and impact of any interruption in operations.

The airports were chosen as a representation of the largest commercial airports but also considered the importance of the interconnectivity of the airports across the globe. By also mapping the characteristics of these airports, such as runway composition and number of terminals, airports can explore the index results for similar organisations. In this way, users can see how they compare to best practice, and in doing so, see where they need to improve and where often limited risk-management resources are best applied.

The 19 threats were chosen for their potential to cause high-impact events that could shut down an airport for extended periods or cause a prolonged and significant disruption. More common disruptions that usually do not cause lengthy delays were omitted, as it is rarely the day-to-day operational events that push resilience beyond capacity, plus it is those rare threats that can fall off top 10 risk lists.

¹ <https://www.wtwco.com/en-GB/News/2022/09/first-ever-airport-risk-index-launched-to-over-one-hundred-airport-executives-today>

² <https://www.wtwco.com/en-GB/Insights/research-programs-and-collaborations/the-willis-research-network-hubs>

³ <https://www.wtwco.com/en-GB/Solutions/products/airport-risk-community-arc>

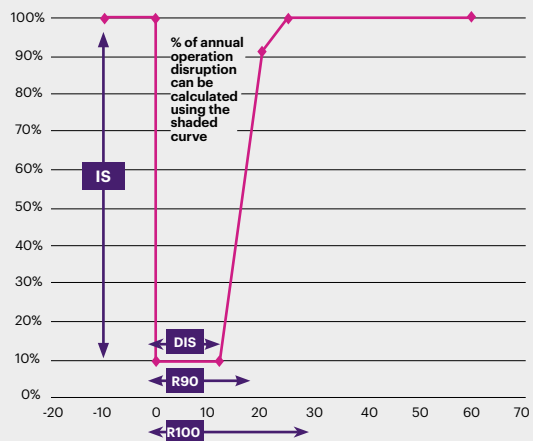
Because events happen with varying intensity – simply listing a systems intrusion as a ‘cyber-attack’ is not very helpful for building resilience. To explore the ranges of possible events, historical precedents and research were used to create multiple scenarios, each with a storyline that allows airport operators to build shared understanding about how events might unfold. Each scenario gradually increases in impact but decreases in likelihood to

provide a more complete representation of the risk. Every scenario that is possible, has been underpinned by historical precedents, and can be explored to understand where to focus resources.

This deep level of analysis depicts a corresponding numerical view of disruption to operational activity, as well as a projected recovery curve for each of the 66 scenarios for each airport depending on their resilience and vulnerability assessments.

Fig.1: **Building the Airport Risk Index. Scenarios include 4 parameters to create a view of disruption**

- IS Initial Severity**
The % of operational activity reduced from the initial impact of the scenario when it occurs. Not all events will cause a complete halt to all activity.
- DIS Duration of Initial Severity**
This is the length of time the initial % reduction of activity continues for before the Airport begins to recover.
- R90 Recovery of 90% of the lost Capacity**
This is the length of time it takes for the Airport to cover 90% of the lost operating capacity after the initial impact of the scenario.
- R100 Recovery of 100% of the lost Capacity**
This is the length of time it takes for the Airport to return to 100% operating capacity after the initial impact of the scenario.



Notes: The curve is comprised of four key parameters: Initial Severity (IS) – how much did the event reduce operating capacity; Duration of Initial Severity (DIS) – how long the airport will be at the initial reduced capacity; R90 – how long it will take to recover 90% of the lost operational capacity; and R100 – time to full recovery. For illustrative purposes only. Source: WTW

Understanding risk and driving resilience are still best met working in partnerships and embracing the talents of people across the globe. This is where our long-term investment in research partnerships proves invaluable, bringing the latest science to our clients.

Hélène Galy, Director WTW Research Network, highlighted the value of science-based partnerships that sit at the core of ARI

A prompt to ask the right questions

Even with the depth of processing and research that went into each of these scenarios, the Index was not designed to give exact answers, but to encourage stakeholders to ask the right questions. Just as no risk operates in isolation, responding to the VUCA (volatility, uncertainty,

complexity, and ambiguity) environment needs action across the breadth of an organisation – there is no shortage of parties with a stake in the game, with different perspectives and levels of understanding.

This shared view allows exploration of key questions such as:

Did we think about this range for our risk?

Are we prepared for all these impacts?

Why have we included the risks we have?

How do we measure recovery?

Do we agree with these results?

How can we improve?

What other stakeholders who will respond during an event do I need to pull in?

Interconnectivity of risk

This modelling can also help users to investigate operational impact of threats by exploring potential pathways through the index. For example, while the index has three different cyber scenarios, it may also be useful to explore other end points, such as aircraft crashes, power outages or fire and explosion scenarios, to determine where resilience could be exceeded.

Looking to the future, there may also be additional threats that need to be considered. As the world transitions to a

low carbon economy and looks to diversify energy security, nuclear facilities may appear on risk lists as governments approve new sites. Sea level rise may also change the risk profile of perils such as tsunami and flood. Risk is not static, it's dynamic and it's also interconnected – as an example, the International Civil Aviation Organization suggested in September the industry starts paying more attention to cumulative risk in its latest guidance⁴ on preparing now for climate change.

⁴ https://www.icao.int/environmental-protection/Documents/Climate%20Risk%20Assessment%20and%20Adaptation%20Report_Key%20Steps%20Risk%20Assessment_final.pdf

A mirror to the future?

In an era when mounting demands for greater risk transparency and accountability are being driven by environmental, social and governance requirements, the ARI is designed to help organisations build stakeholder confidence for today and the future. As WTW explores the outputs with the Airport Risk Community³, we will be keeping an eye on where the index could be further developed, including additional scenarios and cumulative impacts.

Ultimately, with the Airport Risk Index framework, airports will be able to reassure governments, regulators, investors, insurers and business partners that they have a real-time understanding of their risks and the resources in the right places to help ensure operational dependability.



University of Cambridge

The Centre for Risk Studies is a multidisciplinary center of excellence for the study of the management of economic and societal risks. The Centre's focus is in the analysis, assessment, and mitigation of global vulnerabilities for the advancement of political, business and individual decision makers. CCRS is part of the Cambridge Judge Business School. The group provides frameworks for identifying and assessing the impact of systematic threads, using their threat taxonomy, and are very well connected to the insurance industry, government and the World Bank.

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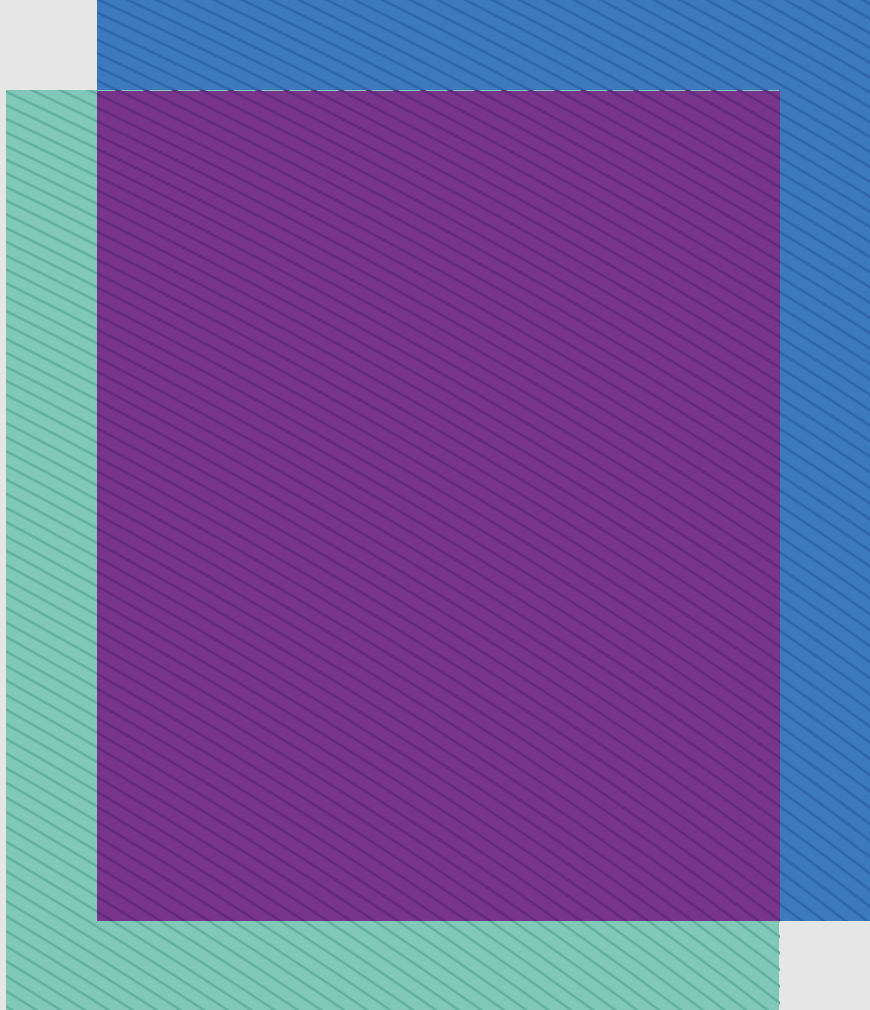
We look forward to sharing more insights with clients in 2023. In line with our WTW data-led strategy, we're driving change across the aviation eco-system. This Index will deliver new perspectives and challenge how industry measures and manages risk.

John Rooley, CEO Global Aerospace, confirmed the value delivered by ARI

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³ <https://www.wtwco.com/en-GB/Solutions/products/airport-risk-community-arc>



About WTW

At WTW (NASDAQ: WTW), we provide data-driven, insight-led solutions in the areas of people, risk and capital. Leveraging the global view and local expertise of our colleagues serving 140 countries and markets, we help you sharpen your strategy, enhance organisational resilience, motivate your workforce and maximise performance. Working shoulder to shoulder with you, we uncover opportunities for sustainable success — and provide perspective that moves you. Learn more at wtwco.com.



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