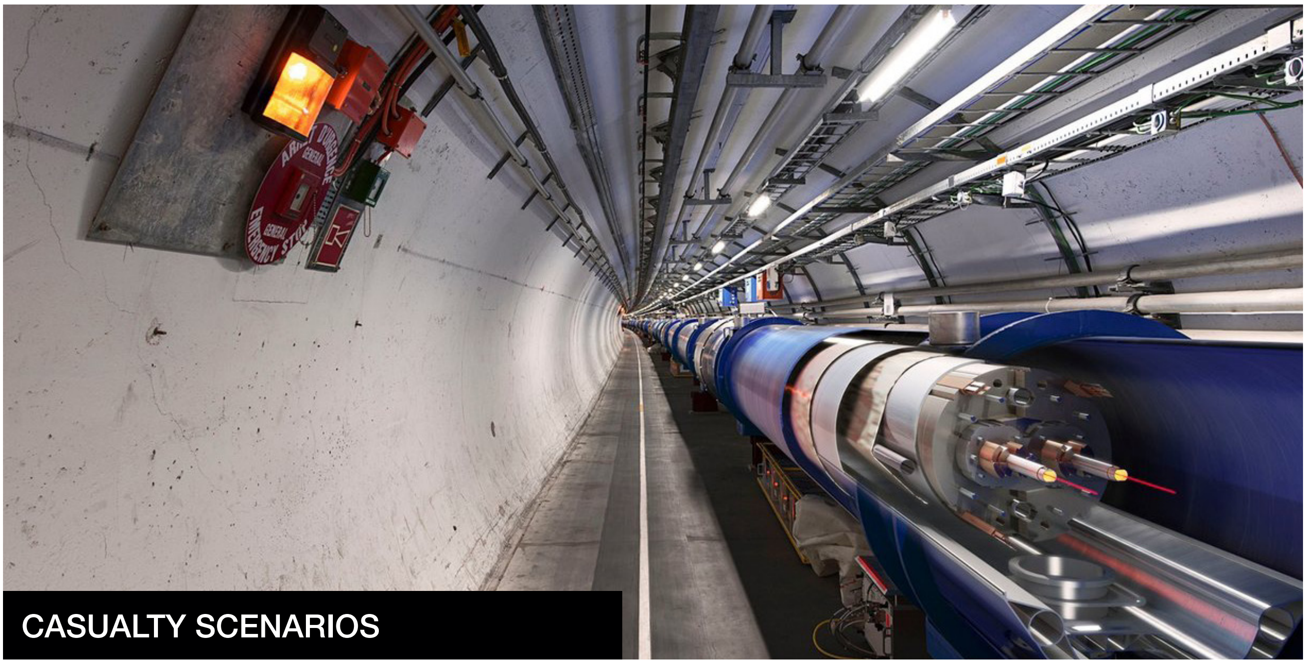


www.russell.co.uk

CASUALTY SCENARIOS: THE DARK MATTER OF RISK

Business Interruption, market downturn and enterprise risk are all co-travellers in the 21st Century's journey into uncharted risk terrain. In this world of extreme connectivity we are all joined up to the same underlying exposures, which are increasingly man-made.

What is made by humans, however, can be un-made - at least partially - which may come as a welcome relief to liability underwriters with concerns over how much risk they are accumulating.

One might speculate that the so-called Fourth Industrial revolution (Source: WEF) we are passing through has the potential to reshape the nature of risk as we know it by concentrating peak casualty exposures in a kind of dark matter that cannot be seen by today's analytics and risk modelling observatories.

Is that the reality or are there risk exposure pioneers that are willing to observe and know our risks?

At Russell Group we believe that there is every reason to be optimistic that this unaccounted for dark risk matter which is expanding today's universe of exposures can be observed, measured and tracked. In this white paper we examine the current casualty risk landscape across three distinct areas of concern: business interruption, market downturn in connected networks and enterprise risk in connected companies.

What are the key drivers of risks across these areas of unmapped space and can we quantify our exposures?

In so doing we will outline potential solutions that can be underpinned by a (re)insurance industry wide collaborative approach to observing, naming and knowing this hitherto unobservable casualty universe.

Business Interruption

Connected supply chains raise the prospect of interruption of business activities from risks within the supply chain. Furthermore, the desire to move quickly in changing markets increases the risk of product recall, product liability, D&O and professional liability. Business delivery currently lacks the adaptive processes and proportionate controls to operate in truly connected markets.

A World Economic Forum paper on the fourth industrial revolution opens as follows:

"The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.

"We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society."

An Era of Extreme Connectivity

Note the WEF insistence that the response to emerging risks must be "integrated". If we accept the WEF argument that global macro-economic risks can be resolved most efficiently by applying integrated global macro-economic solutions in an era of extreme connectivity is it possible to apply the same line of thinking to global insurance risks?

We believe so. We have the people, the technology but do we have the will to collaborate more closely?

Typically, specialty classes operate within a risk silo while others such as cyber, political and credit risks cut across silos or classes. It is now time to take enterprise connected risk solutions to the next stage of development.

Business interruption (BI) remains the top peril for the fourth year in succession in the Allianz Global Risk Barometer, with 38% of responses rating this as one of the three most important risks companies face.

In today's increasingly complex and interconnected corporate environment many of the top 10 global business perils in the 2016 Risk Barometer rankings, such as cyber-incidents and political risks, for example can also have severe BI implications.

Insufficient historical data, multiple losses that threaten to become systemic, and a theoretical misunderstanding of what Business Interruption coverage provides to an insured are some of the major issues that confront insurers today.

These factors must be assessed and fully known to provide quick and accurate claims settlements.

Complex coverage issues

At the same time supply chain disruptions can create complex coverage issues. It is common business practice today for companies to have several tiers of suppliers. Sub tier events are difficult for an insured company to observe making it a challenge to follow and control the disruption.

The time element part of a supply chain policy is not designed to meet exposures that happen at third party premises. The other factor to consider is that suppliers' extension clauses commonly apply to first tier or direct suppliers only, for physical damage events and insured perils only, subject to restricted perils.

It has been estimated that supply chain disruption can result in significant damage to shareholder value with the after-effects lasting two years and reducing company sales by as much as 10 percent. We have a practical example of how man-made business interruption disruption can play out on a balance sheet in 2016.

The VW emissions scandal rocked the foundations of the automobile industry. The current state of play is that owners of the 500,000 cars in the US affected will be offered 'substantial compensation', and the option to sell their vehicle back to VW after the VW Group struck a preliminary deal with US authorities over the "dieselgate" emissions test violations.

No word on specific dollar sums has been agreed, but the Group recently announced it has set aside €16.2billion (£12.6billion) to cover the cost of the emissions crisis. Last year VW estimated the scandal would cost the company £4.7billion in remuneration.

Could the VW Loss have been foreseen?

Could the loss at VW have been foreseen? Clearly there is no magic bullet for projecting revenues "had a loss not occurred" in today's era of extreme connectivity. There are some questions that casualty underwriters and their insureds across sectors might consider in advance, however.

Does information show that the specific market for the clients' products or services has changed and does the insured have any contracts that support forecasted sales levels despite the vicissitudes of the economy? Is the insured's business offering unique? If so, would sales be less impacted by a downturn in the economy in comparison with the rest of the market?

Need for more Risk Modelling Strategies

What about wider market intelligence on economic factors, for example, have there been significant changes in the competitive landscape as a result of the business environment? Finally, has there been a significant transformation of the supply chain or commodity prices caused by economic conditions that are affecting an insured's price structure?

Modern data analytics and integrated risk modelling strategies can also play a significant role. These strategies allow underwriters to perform portfolio management against a known universe of companies and related underlying exposures.

Such a connected risk management strategy can perform market share analysis, analyse interconnected exposures between companies more completely and quicker whilst also being able to measure counterparty exposure, supply chain, sector and systemic risk.

Market downturn in connected networks and ecosystems

As more and more industries become connected, networks and ecosystems evolve, and the potential of a market downturn as a result of human action in a completely connected network rises

We are currently experiencing the biggest contraction in global trade since the financial crisis. BRICs and other emerging markets are struggling badly and the impact of the drop in commodity prices is helping to ensure that market and macro developments feature high on the list of boardroom risk concerns.

Russia, Brazil, Venezuela, South Africa, Nigeria and Malaysia are among those countries which have been negatively affected by cheaper commodity prices.

According to Ludovic Subran, Chief Economist at trade credit insurer Euler Hermes: "However, it is fascinating to see that, in many cases, the decline in oil and gas, iron ore and steel prices has stressed the supply chain more than it has benefited it. Sectors that you would expect to benefit from such a development, such as construction for example, have not done as well as anticipated because of structural difficulties.

"Further, some sectors, such as machinery and equipment, have been the collateral damage of plummeting investment in the oil and gas industry.

"With regards to many of the macro factors that unfolded through 2015, it seems that the negatives accumulated at a rate that exceeded the positives – a case of 'one step forwards, two steps back' – and this was something that made companies extremely nervous during H2."

Priorities for conflict prevention in 2016?

In January, the World Economic Forum ranked large-scale refugee flows as its global risk of highest concern. The US Council on Foreign Relations' top 10 priorities for conflict prevention in 2016 include political instability in the EU caused by the influx of migrants.

In the UK where this white paper is being written we are currently experiencing major concerns about refugees and economic migrants in a debate that has become entwined in the debate between those who want Britain to vote to leave the EU in June – and those who wish to remain.

Can there be any doubt that migration will increase as the world's economy becomes more globalised, and as demographic and environmental pressures bite? The science says not but in debates surrounding immigration the cool heads of scientists are often distrusted and can be easily drowned out by catchy headlines.

Brexit

Then there is Brexit. Can it, will it happen? Following U.S. President Obama's visit and his view that the UK would be put to the back of the global trade agreements queue in the wake of a majority vote for leave, some commentators believe the tide will turn in favour of the leave team.

It might be unwise to place a large bet on such an outcome, however, the UK "bookie" Ladbrokes say that the chances of Brexit diminished sharply the day after Obama weighed into the debate. Ladbrokes revealed that 90 per cent of all bets in the 48 hours following his contribution were for remain, while the prospects of a leave verdict dived from 34 per cent to 29 per cent as "punters" rushed to back the status quo.

Meanwhile, subdued global trade finance remains a concern – partly related to the post crisis regulation with which banks have had to comply. Basel II and Basel III regulatory regimes distracts the global banking sector, which has other priorities at the moment.

This translates into a less fluid and less enthusiastic financing element across the whole trade finance product offering.

Solvency II

Meanwhile, potentially the biggest change this year that affects the credit (re)insurance underwriting community – possibly the biggest change in decades – is the implementation of Solvency II. This is not solely a European exercise. A lot of jurisdictions have similar Solvency II compliant regimes. Australia, South Africa, Mexico, and Canada are in the process of implementing or have implemented similar types of regime.

The credit (re)insurance market remains soft. One reason is that there are more (re)insurers than there used to be. (Re)insurers wish to diversify – a trend that is driven by Solvency II or similar capital regimes in the country where they operate.

There are also, of course, sound business reasons for entering the trade credit arena, which has shown some very good results and returns over the years. It's an attractive segment to divest into. So if more risk is being taken on by (re)insurers who are accepting lower rates while accepting more underlying exposure, is that sustainable?

The Sovereign Debt Risk

Sovereign debt is a huge concern for Europe. If or when another crisis emerges, will credit (re) insurers be able to step in and support their clients as they did in the last crisis? Sovereign debt is an area, which affects the euro economy and trade so that is something that is monitored by credit (re)insurers, particularly those countries with high debt levels.

Meanwhile, the problem with the Solvency II regime is that it is a 'one size fits all approach'.

Whether you are a multinational with 10,000 employees or a small insurance company with 50 employees you have to apply the same rules. These are hard enough for a large company which can employ a team of actuaries and other specialists but for a small company these rules are often unnecessary or far too complex to address directly.

Another challenge is that Solvency II results in shorter reporting times so where there may be a three month period to report matters this will be brought back over time to one month. This has enormous consequences on organisations which are already hard pressed for resources at this level and it adds to the costs.

$8 Trillion

According to a paper by McKinsey and Company: "Across the Asian region as a whole, we calculate that around $8 trillion will be committed to infrastructure projects over the next decade to remedy historical underinvestment and accommodate the explosion in demand".

The paper's authors explain that most Asian infrastructure projects have been funded by governments or domestic banks with foreign investors for the most part being excluded.

Where foreign investors were allowed to participate they were often confronted with serious restrictions, which could include complex regulatory and legal regimes, an imbalance in the quality of the workforce, and on occasion, political interference.

The good news is as McKinsey says: "We have started to see signs that global private capital is increasingly welcome. The combined effects of increased stimulus spending and reduced tax receipts have increased deficits, with the result that restrictions on foreign investects are being carried out under public–private partnerships (PPP)."

McKinsey estimates that over the next ten years fully $1 trillion of the $8 trillion of projected infrastructure projects will be open to private investors under PPPs.

Trade credit (re)insurers take a keen interest in economic indicators but it is important to remember that they are not economists per se but credit risk underwriters. Therefore their view on trading countries is coloured very much from a perspective of how trade flows are affected, and how behaviour is affected.

To quote Robert Nijhout from the International Credit and Surety Association whose words appeared in a previous Russell Group white paper:

"To identify countries that are going to perform better than others one needs to look for a couple of indicators: the first is a stable and reliable currency, the second a working legal framework and the third is allowing trade flows to be sustained with as few trade barriers - or as few as possible in place.

"The more protection there is, the more difficult it is to trade and the more vulnerable an economy is to any shock wherever that comes."

Enterprise risk in connected companies

As more and more of a company becomes connected to commerce markets -which are themselves interconnected - the need to have adaptive business models is imperative.

Climate changes and regulation designed to address environmental standards were to a large degree important factors in the VW emissions scandal, which resulted in the company trying to game the system. We live in an era of risk and instability, which has been catalysed by extreme connectivity.

Globalization, new technologies, and greater transparency have combined to upend the business environment and give many CEOs a deep sense of unease.

According to the Harvard Business review: "Since 1980 the volatility of business operating margins, largely static since the 1950s, has more than doubled, as has the size of the gap between winners (companies with high operating margins) and losers (those with low ones)."

Corporate Failures

The numbers are instructive. According to HBR: "The percentage of companies falling out of the top three rankings in their industry increased from 2% in 1960 to 14% in 2008. What's more, market leadership is proving to be an increasingly dubious prize: The once strong correlation between profitability and industry share is now almost non-existent in some sectors.

"According to our calculation, the probability that the market share leader is also the profitability leader declined from 34% in 1950 to just 7% in 2007. And it has become virtually impossible for some executives even to clearly identify in what industry and with which companies they're competing."

The new challenge is to build up skills in managing complex multi-stakeholder systems in an increasingly interconnected world. If you view many of the lines of thought in this white paper from the other side of the telescope it seems that extremely connected systemic risk is, of course, an extremely connected opportunity!

Or, as HBR, says: "In order to adapt, a company must have its antennae tuned to signals of change from the external environment, decode them, and quickly act to refine or reinvent its business model and even reshape the information landscape of its industry."

Lee Vinsel and Andrew Russell are professors studying technology at the Stevens Institute of Technology in Hoboken. It may sound counter-intuitive given their specialty, but they say latter-day debates about technology are placing too much emphasis on "innovation," at the expense of something just as important—maintenance.

Innovation vs Maintenance

The argument goes that in the last two decades, conversations about innovation have become more and more counterproductive. America's ongoing infrastructure crisis, for example, could be blamed partly on a philosophy that lauds expenditure on innovation over maintenance.

In recent years, however, train crashes, subway meltdowns, and poisoned water incidents that bring to mind developing world countries rather than the world's only hyper power are pushing infrastructure upkeep back into the U.S public consciousness.

Vinsel and Russell argue that companies, too, can be harmed by an overemphasis on innovation. Externally, the failure of things like transportation systems can inflict significant direct costs. And employees can't be productive without 'maintenance' work backing them up, from housekeeping to education.

The other potential downside risk of the business world's mania for innovation is potentially the fallout of the FinTech IPO boom that is hanging over Silicon Valley like a digital sword of Damocles. Innovation makes us blind to the benefits of good old fashioned maintenance.

Blind faith in the benefits of innovation can also be used to blind us to the virtues of good old fashioned common sense.

Unicorns Flying too High?

As an article in Fortune magazine notes: "Time and time again during the current IPO cycle, Wall Street underwriters—egged on by ambitious CEOs, hungry venture capitalists, and favoured institutional investors—have hyped one technology IPO after another.

"Welcome to the world of zombie tech stocks—once-highflying IPOs wandering aimlessly in the wasteland of the public equity markets and understandably unloved by investors."

In this environment there could be trouble ahead for the new wave of talked-up technology companies in the IPO pipeline—the unicorns as they are called - or private start-ups valued at $1 billion or more by investors.

The combined value ascribed to the 173 unicorns by their investors is $585 billion, which is quite a surprisingly large figure considering that so many of them are not even close to being profitable. The system is essentially gamed against retail and private investors in favour of the institutional investors and Wall Street underwriters.

Volatile Investor Environment

In a post-IPO landscape stocks - in which the initial sugar rush is wearing off - we could be heading into a very volatile environment that is potentially bad for small investors but very amenable indeed to lawyers. Consider the tale of former FinTech investor sweetheart GoPro, the company behind adventure athlete's favourite digital camera.

According to Fortune Magazine:

"In mid-January, trading in GoPro's stock had to be temporarily halted after the company warned of disappointing fourth-quarter results and said it planned to lay off 7% of its workforce. Lawyers representing shareholders quickly slapped the company with class-action lawsuits. GoPro's shares recently traded for less than $12, more than 50% below its IPO price."

Extreme Connectivity in the Fourth Industrial Revolution

The WEF notes that: "When compared with previous industrial revolutions, the Fourth is evolving at an exponential rather than a linear pace. Moreover, it is disrupting almost every industry in every country. And the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance."

Survey after survey reveals that global CEOs and senior business executives fear the acceleration of innovation and pace of disruption, which is increasingly hard to comprehend let alone measure from a risk avoidance perspective. Even the best connected and most well-informed risk takers out there - whether entrepreneurs or risk carriers - will need support to understand and know their risks.

Klaus Schwab is Founder and Executive Chairman of the World Economic Forum and he makes a plea for greater collaboration and a return to some basic human values:

"I am a great enthusiast and early adopter of technology, but sometimes I wonder whether the inexorable integration of technology in our lives could diminish some of our quintessential human capacities, such as compassion and cooperation. Our relationship with our smartphones is a case in point.

"Constant connection may deprive us of one of life's most important assets: the time to pause, reflect, and engage in meaningful conversation."

Temptation in Tempestuous Times

The temptation in these tempestuous and volatile times may also be to retreat into the very 21st Century practice of pursuing our own individualism. That will work for some, not so well for others.

The Russell Group view is that a (re)insurance industry wide collaborative approach to observing, naming and knowing today's unobservable casualty universe is the way forward.

The modern world – certainly in the liability environment - is surely too complex to be managed on an individual silo basis? Extreme connectivity is a huge opportunity but also a risk that must be understood and managed.

At the start of this white paper we also set out to examine the current casualty risk landscape across three distinct areas of concern: business interruption, market downturn in connected networks and enterprise risk in connected companies.

It is our position that modern data analytics and integrated risk modelling strategies must play a greater role in allowing underwriters to perform portfolio management against a known universe of companies and related underlying exposure

Analysing Interconnected Relationships

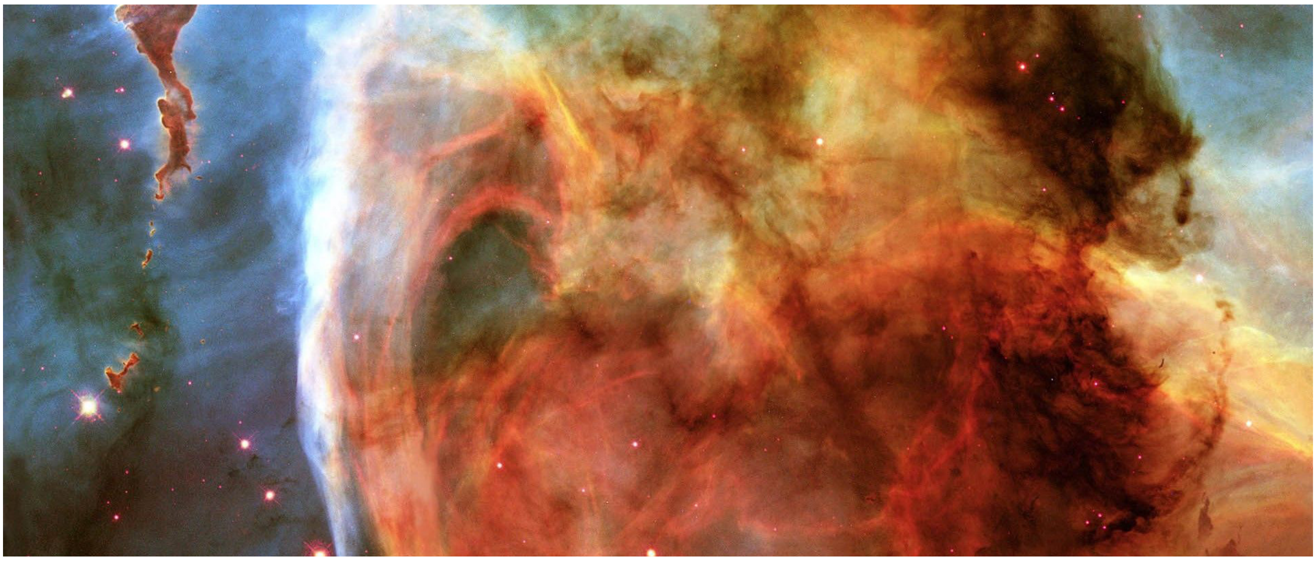
The insurance community needs to get better at analysing interconnected relationships between companies and measuring counterparty exposure, supply chain, sector and systemic risk. To gather the data we need will require a more collaborative approach. Call it enlightened mutual interest.

You could just call it sharing but whatever the name we need to establish what are the key drivers of risks across these areas of unmapped space and can we quantify our exposures?

Does the casualty market need more transparency over the insureds that are ultimately being insured and reinsured to properly enforce good accumulation controls? Is a naming convention required which (re)insurers could use with confidence knowing that they are taking about the same insured risk?

Finally, what are the likely scenarios which the industry needs to get a better understanding over? We have explored some industry scenarios in this white paper but a lot more research needs to be done to map the unknown dark risk universe and the extreme connectivity that underpins it.

www.russell.co.uk



About Russell Group Limited

Russell Group is a leading risk management software and service company that provides a truly integrated risk management framework for (re) insurance clients operating across the specialty classes through its ALPS suite of products.

Underwriting risk is, or should be, the primary concern of specialty (re)insurance companies in quantifying portfolio exposure, pricing risk, optimising reinsurance purchase and evaluating the amount of capital needed to support the portfolio. Russell through its trusted ALPS solution provides underwriters with the capability to underwrite with flair and flexibility, underpinned by the fluency of exposure knowledge required to deliver superior portfolio return on equity.

If you would like to learn more about Russell Group, its products and services, please contact sbasi@russell.co.uk or rborg@russell.co.uk.

\