INTRODUCTION
2014 SET TO BE CHALLENGING YEAR
The next year is set to be a challenge. The mining sector continues to face low commodity prices, combined with rising operational costs and supply and demand imbalances. However, this year is also dogged by an uncertain financial future. Mining stocks fell some 30% in 2013 and there is little sign of improvement coming. Shareholders still want to see good returns, increasing the pressure still further. Those mining operations that can reduce costs from the boom-year levels and keep projects on track are likely to be the successful ones in the coming year.

Opportunity, challenge and volatility – it is all there in 2014. The question for mining companies is how to keep track of all three in a way that supports the business. Risk analytics are playing an increasingly valuable role in this diverse operating environment. Without risk there is no enterprise but no one likes to take risks without knowing the odds.

However, while capital dilemmas may have risen to the top of the risk table for the coming year, mining companies must not forget the “more “traditional” risks that will threaten their operations. Resource nationalism continues apace, made worse by the yawning gap between public perception and commercial realities. Generally local populations are unaware of the falling commodity prices and believe mining companies are continuing to make huge profits. In a tough economic climate, governments are under increased pressure and mining companies can become convenient scapegoats in the run-up to elections.

Conversely, skills shortages which have been such an issue for the last few years have abated, simply because the number of active operations has reduced. However, that is not the end of the risk. Companies are still facing a challenge in attracting the right people with the right skills. They also have to battle bureaucracy and ensure they observe local quotas. Cost cutting may be a feature of the business but cutting back on training could prove to be a short term fix with long term implications as human error continues to lie behind the majority of accidents and incidents at sites and beyond.

Finally, once the minerals have been extracted, mining companies also face challenges in delivering the product to customers in the right place at the right time. The phenomenon of just in time delivery continues to drive logistics worldwide and remains a risk. In all, companies who can drive down costs and protect their margins in this tough climate are those who will be resilient to the threats they face. The concept of being resilient in a risky world will be developed more in this year’s publication. 2014 looks set to challenge companies at every stage.

On the positive side the insurance market is very buoyant at the present time and we are predicting significant improvements for buyers in the coming year.

We hope you enjoy reading our Mining Risk Review for 2014.

The Mining Practice Group
COST REDUCTION
BRINGING COSTS DOWN KEY TO SUCCESS IN 2014
For the past decade the mining industry has outperformed the broader equity markets, but this trend has changed dramatically recently. While mining stocks fell slightly in 2012, during 2013 valuations have fallen nearly 30%.

2014 promises continuing difficulties, with the real prospect of rising costs, falling commodity prices, supply and demand imbalances and decreased productivity levels.

Falling commodity prices are squeezing profits but boom-era costs still prevail. Only those that can adjust their cost structure will be able to protect margins and create better value. According to a recent report from Deloitte Touche Tohmatsu Limited, mining companies must embrace cost cutting measures to lay the foundation for long-term business growth and future success.

In Tracking the Trends 2014, Deloitte says that mining companies need to think of new ways to succeed as they face “seismic” shifts. By way of example, as many as 20 CEOs, including half of those in the top 10 companies, have changed since April 2012. Of the top 10 issues outlined for 2014, the cost of contraction is one of the greatest concerns as mining productivity hits new lows while both input and production costs remain stubbornly high. To reduce costs sustainably, miners must improve overall productivity, strengthen management and reporting systems, use analytics to uncover underlying cost drivers and rationalise cost and supply chains. The industry, Deloitte says, needs to respond with a variety of cost-cutting measures in an attempt to offset eroding margins. The race for growth in the past decade saw poor operating cost discipline, resulting in an excessive costs build within the sector.

BHP Billiton, for example, saw its unit cash cost more than double between 2008 to 2012 at its Queensland coking coal operations. Now, the major diversified companies are leading the charge to cut back, with Rio Tinto targeting cumulative cash cost savings of USD 5bn in the next two years. Significant moves include the incoming BHP chief executive officer Andrew Mackenzie taking a 25% reduction in base salary relative to his predecessor. Glencore is targeting in excess of USD 500m in savings following the merger with Xstrata. There is no doubt that the industry is serious.

To date, the bulk of cost cutting has come via reduction of head office spend, exploration, business development and non-critical sustaining capital. We have not yet seen loss-making production assets curtailed or substantial cost cutting at the asset level.

“High mineral prices concealed the impact of rampant cost inflation, falling productivity, currency appreciation and poor capital discipline. Current lower prices are revealing how much these have been dragging on margins for more than a decade. To remain competitive, these handicaps must be addressed.”

Nathan Roost, Mining & Metals Advisory Partner, EY Australia
Given the poor returns generated on new investment, declining future returns on capital and as commodity prices fall, it is no surprise that investors have called for more rigorous capital discipline and demanded returns of cash, rather than reinvestment in future growth projects. As shown in the chart above, Credit Suisse estimate capital expenditure will fall by 54% between 2012 - 2016. A number of major growth projects have already been postponed such as BHP Billiton’s Outer Harbour & Olympic Dam expansion; Rio Tinto’s Mozambique coal business; Anglo American’s Minas Rio project; and Glencore Xstrata’s Freida River, El Pachon, Wandoan and Kabanga projects. Such is the sentiment in the sector that this may just be the beginning.

In a recent statement, Peter Hambro, chairman of Petropavlovsk, said “The current environment presents a challenge to all gold producing companies and Petropavlovsk has moved quickly to reduce costs and identify additional low-cost resources at our existing sites.”

One of these costs is risk management and insurance and in this year’s Mining Risk Review we have looked at the process of extracting maximum value from insurance procurement.

“There’s no doubt the mining industry is experiencing tremendous pressure on costs. But cost constraints often lead to innovation. Mining has grown bigger over the past 200 years – bigger plants, bigger trucks, bigger blasts. But the industry itself hasn’t evolved much. Now is the time to make fundamental and dramatic changes.”

Nathan Glenn Ives, Americas Mining Leader, Deloitte Touche Tohmatsu Limited
THE MAJOR CHANGES

In Deloitte’s sixth annual report “Tracking the Trends 2014”, it has identified 10 top trends for the mining sector in 2014:

• **The cost of contraction**: mining productivity hits new lows.

• **Matching supply to demand**: market imbalances wreak commodity price havoc.

• **The remaking of mining**: exploring the innovation imperative.

• **Finding funding**: debt up, deals down, and juniors fight for survival.

• **The project pipeline stutters**: record impairments call capital allocation practices into question.

• **Power to the people**: local community demands ramp up.

• **Resource nationalism spreads**: government relations marked by rising hostility.

• **Crackdown on corruption**: a zero tolerance regulatory environment complicates compliance.

• **Changing the safety equation**: from zero harm to zero fatalities.

• **A dearth of skills**: the talent gap slinks into executive suites.

Source: Deloitte Touche Tohmatsu Limited
ANALYTICS

ANALYSING THE RISK
If we ask the question “What are the common characteristics of the mining industry?”, we would expect a diverse range of responses. However, some common themes may include opportunity, challenge and volatility. The answers would also reflect the role that the respondent has in the industry: national or private company; geographic region; mature established resources versus cutting edge innovative enterprise; etc.

Risk analytics are playing an increasingly valuable role in this diverse operating environment. Without risk there is no enterprise but no one likes to take risks without knowing the odds. Risk analytics do not provide all the answers, but they do offer objective insight into the full range of outcomes faced by businesses for the next 12 months and beyond.

**WHAT RISKS CAN AN ORGANISATION AFFORD?**

The common themes of risk tolerance and risk appetite are addressed by different companies in differing ways, and with a significant variance in the maturity of the approach. However, a good place to start is:

“How do your stakeholders (owners, management, regulators etc.) measure you?”

Common measures include EBITDA, net income % margin and net debt to equity. The next question is:

“What drop in these numbers will they tolerate if the business doesn’t perform as forecast?”

In the example table following we illustrate a mining company that has identified its key financial performance indicators (KPIs). Its stakeholders have advised that they do not expect any of these KPIs to drop by more than 5% during the next 12 months and this 5% is calculated to have a value of USD 250m. This is “risk ground zero” – all of the risks that the company takes, added together, should not exceed USD 250m. This leads to the question:

“So what risks are we taking and how do they stack up?”

“In contrast to just 12 to 18 months ago when fast-tracking production and capacity constraints were top of the agenda, CEOs and boards today are protecting returns and managing the interests of varied and often competing stakeholders.”

*Mike Elliott, Global Mining and Metals Leader, EY*
A mining company’s risk register will typically describe certain “harder” risks using financial measures and other “softer” risks using qualitative measures. Using this, it will develop its risk management strategy.

**RISK ANALYTICS ARE NOTHING NEW**

Most companies employ internal or external analysts to measure particular “hard” risks; commodity prices, bank loan interest rates, bond rates and currency fluctuation are common examples. The firm will then decide the extent to which, where financial instruments are available and cost effective, they wish to pay to hedge these risks.

These hard risks are characterised by an abundance of data. Analysts working in these areas look at historical experience, economic factors and exposure metrics to project how these risks are likely to develop in the coming months and years. They will also consider the range of volatility around these average expectations.

The banking sector provides useful insight. For many banks, a key operational risk is sanction risk: the risk that the bank innocently or wilfully completes transactions with countries in breach of its regulatory requirements. The bank may have a limited amount of documented data from its own experience, but this would not provide it with enough information to gain a proper understanding of the risk and to manage it accordingly. However, the bank can also access relevant industry and risk advisor loss databases to gain further insight. Additional insight into the risk profile can also be gained by eliciting opinions from relevant experts and by completing structured scenario analysis.

“Soft” risks tend to arise from many, volatile, opaque contributory factors, often including human behaviour.

The science and art of the risk analyst is to understand and model these risks, translating the result into the common language of loss frequency and loss severity:

“How often can our company expect to have a loss from this risk and how big would it be?”
Due to regulatory requirements (Basel II etc) banks are compelled to assess these risks, either using regulator-approved internal analytical methods or by accepting the regular “broad brush” risk assessment measure. However, mining companies are not subject to the same, standardised international type of regulation. Therefore the need to complete analysis for soft risks is a management decision – will the time, effort and expense be worth it? Increasingly, the answer is “yes”. Senior management, owners, investors and local regulators want evidence that the company has a real understanding of both its “upside” and “downside” risks and with proper reference to the company’s risk appetite. Regulators also want to see that firms have the relevant risk management measures in place.

“WE’RE INSURED”

As illustrated in the graphic below, insurance is just one means of risk management and can provide a financially efficient form of risk transfer for a range of risks.
Since the 1990s computer processing power has become sufficiently advanced and cheap to enable actuaries to model more risks. The insurance industry now relies on computers and actuaries to help understand risks and to set pricing guidelines for their underwriters. Because they insure a portfolio of risks, they have access to extensive loss and exposure data so, therefore, can rely on models in all but the most unexpected catastrophic loss scenarios. With this knowledge comes the ability to shave profit margins to gain market share and to exploit new insurance product opportunities.

For those risks that mining companies insure, the above insight raises concerns:

“If my insurer has all of this information, shouldn’t I? How can we develop a sustainable business partnership when one party holds all the cards? How can we level the playing field?”

Fortunately, the mining sector increasingly has access to the analytical horsepower and information to address this concern. Growing databases of client and industry loss and exposure information are enabling better risk models to be created, allowing companies to objectively answer the key insurable risk questions:

- How much risk should we retain?
- How much insurance should we buy?
- What should this insurance cost?

### WHERE NEXT

For any insurer seeking to offload risk by buying reinsurance, analytics are a “table stake”. Before negotiations start, both parties agree on the risks: these are the “information ground rules”.

For bigger mining companies, especially, risk analytics are also becoming an essential strategic resource and in many cases, a corporate governance necessity. As more and more companies adopt this approach so the body of risk data and quality of advice is developing and improving to the benefit of the industry. The mining sector will, of course, continue to ebb and flow, with companies winning and losing along the way. The role of risk analytics is to help these companies to become knowledgeable risk-takers and, where appropriate, to support the financially efficient transfer of these risks.

<table>
<thead>
<tr>
<th>Returned Period</th>
<th>Percentile</th>
<th>Aggregate Annual Losses</th>
<th>No. of Losses</th>
<th>Retained 5M EEL</th>
<th>Captive 5M EEL, 10M AAD</th>
<th>Insurers</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>50%</td>
<td>11,080,847</td>
<td>3</td>
<td>6,567,979</td>
<td>2,419,318</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>80%</td>
<td>37,333,768</td>
<td>4</td>
<td>11,811,107</td>
<td>5,649,242</td>
<td>18,466,821</td>
</tr>
<tr>
<td>10</td>
<td>90%</td>
<td>67,727,197</td>
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<td>15,000,000</td>
<td>10,000,000</td>
<td>46,512,112</td>
</tr>
<tr>
<td>25</td>
<td>96%</td>
<td>126,825,380</td>
<td>6</td>
<td>18,571,525</td>
<td>10,000,000</td>
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<td>50</td>
<td>98%</td>
<td>185,791,560</td>
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<td>10,000,000</td>
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<td>100</td>
<td>99%</td>
<td>260,562,091</td>
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<td>10,000,000</td>
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<td>10,000,000</td>
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<td>25,640,950</td>
<td>10,000,000</td>
<td>955,586,839</td>
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<tr>
<td><strong>Average</strong></td>
<td></td>
<td><strong>29,249,655</strong></td>
<td><strong>3.0</strong></td>
<td><strong>25,640,423</strong></td>
<td><strong>3,314,522</strong></td>
<td><strong>18,409,279</strong></td>
</tr>
</tbody>
</table>

**Volatility** (Standard Deviation)

- Average 70,972,118
- 1.7 5,524,180
- 3,550,147
- 67,993,606

**Actuarially forecast premium**

- 10% “softer market” - 25.2
- 25% “harder market” - 35.4

In extreme scenarios losses exceed USD 965m.
Suggests limit of USD 1bn.

Captive transfer premium expected to be USD 3.3m.

Long term average losses to insurers forecast at USD 18.4m.
Premium will also for loss volatility.
Mining CEOs are taking a fresh look at what assets are core and plan to raise proceeds to reduce debt, improve shareholder returns and fund capital expenditures. They will need to concentrate on the projects they have and operate them with a focus on the bottom line.”

John Gravelle, Global and Canadian Mining Leader, PwC
UNDER PINNING TRANSACTIONAL EXPOSURE
After a turbulent year, there is much uncertainty around how mergers and acquisitions (M&A) activity in the mining sector will continue during 2014. However, the signs are that there will still be opportunities and that investment will continue. With the sector becoming increasingly cost conscious, distressed sales are dominating while owners and operators are having to streamline existing and new operations with strategic transactions.

Those that have yet to sell non-core assets soon will, to maintain strategic position and cost effectiveness under very difficult conditions. Diversification is not fashionable in these economically tough times.

Healthy cash injections have come from private wealth and capital from new territories. That cash has been welcome in a sector where the need for capital has been at an all-time high. The M&A environment in the past year has encompassed traditional and alternative funding raising methods, ranging from joint ventures with foreign investors to putting commodity streams and royalty interests on the market. With further governmental support, acquisitions look set to continue in key areas of the sector. Joint ventures, consolidations and mergers may continue to provide the financing the industry desperately needs. They offer companies attractive alternative solutions, sometimes allowing for key strategic partnerships to be formed, resulting in an enhanced competitive position. While the largest companies have not been the most active acquirers in recent times, continued dampened valuations combined with rock bottom commodity prices may make it prove difficult to resist opportunities for inorganic growth.

However, predictions suggest activity may not be on a par with the volume of the last 12 months as natural resources may be less favoured when compared with investment in new trends. Asian investors are anticipated to be recurrent providers of development capital during 2014 as their economies continue to recover.

“Most of the green field deals closing include discounted offtake agreements, funded royalty arrangements, streaming arrangements or a subordinated mezzanine tranche. These may not be the traditional products for greenfield deals. However they are in my view here to stay.”

Martin McCann, Global Head of Infrastructure, Mining and Commodities at Norton Rose Fulbright

**TOP 20 DEALS**

**BY COUNTRY:**
- USA 4%
- Russia 26%
- Canada 27%
- Australia 4%
- Kazakhstan 34%
- Tajikistan 2%
- Finland 1%
- UK 2%

**BY TOTAL DEAL VALUES:**

![Bar chart showing total deal values by country, with Kazakhstan leading at over 7000 GBP M, followed by Russia, Canada, Australia, Tajikistan, USA, Finland, and UK.]
For a full list of the top 20 deals, see Annex 1, however, with more than 60% of the top deals by value, Russia and Kazakhstan were, by far, the most active territories in 2013. That may have surprised some but, with private wealth taking the driving seat, it is a trend we could see more of in the coming year. Notable examples are the likes of Mikhail Prokhorov, with his divestiture in Polyus Gold International to two domestic billionaires, and the USD 4.5bn buyout of Eurasian Natural Resources Corporation by three of the founders of the company in Kazakhstan. Thanks to depressed prices, the sector has become cheap pickings for the cash rich. Gold and copper have attracted the most interest and, with no evidence to suggest otherwise, could well continue to be strong contenders within the M&A environment in 2014. The strength of these commodities has been stable in both 2012 and 2013, accounting for nearly half of the transactions in the sector by both value and volume. Out of the two, gold has been the most sought after with 26% of transactions by value for Q1 & 2 in 2012, this increased to 36% for the same period in 2013. Uranium and potash are tipped to be “hot stuff” in 2014, with prices rising and also increasing demand from Japan, China and India.

Acquisition may be the only way to facilitate an increase in production, as heavy machinery makers have cut production facilities to cope with the global slowdown. This roll-back by equipment manufacturers appears linked to investment cuts in new projects from some of the world’s largest mining groups. This lack of capital investment does not bode well for a thriving M&A arena in 2014.

The tendency for junior mining companies, struggling under financial pressures, to be sold and integrated into larger companies will continue.

As Simmons & Simmons reports, despite reduced levels of M&A activity in the mining sector, with deal volume for the first half of 2013 reportedly down by almost one-third on the same period last year, there is no less focus on the importance of those M&A deals for the industry. It agrees, increased cost pressures, constraints on the availability of debt and equity to pay for capital expansion and weakened demand resulting in depressed commodity prices have resulted in mining companies engaging in M&A for purposes of divestment, rather than investment.

The firm also believes that the type of investors attracted to the sector are those more comfortable with longer term investments of anywhere between three and 10 years, which suits the cyclical nature that they recognise in the mining sector.

**MOTIVATORS IN THE M&A PROCESS**

Simmons & Simmons maintains that, whatever the industry and whatever the sector, individual motivators for M&A activity are the same: sellers see value in assets or companies that they wish to realise as fully as possible; while buyers seek investment opportunity on which to capitalise. This results in parties having divergent objectives: for sellers, to sell at the highest possible valuation and walk away as cleanly and with as little residual risk as possible; and for buyers, to buy for the lowest possible amount and inherit as little risk as they can. This valuation/risk apportionment dynamic is a key feature in mining M&A, given the uncertainties of valuation and the risks involved in these transactions.

“Partnering as a business model to manage costs and risk is increasing in a climate of low returns. However, evaluating and understanding the risks and complexities associated with the business operating model, business processes, information systems, corporate culture, structure and governance is critical.”

*Ernst & Young*
This divergence in motivation affects the following:

(i) the length of time that buyers spend (or should spend) in conducting due diligence on a target company or asset;
(ii) the careful consideration that both sellers and buyers give to indemnities, representations, warranties and other provisions in sale and purchase documentation that seek to apportion liability and risk between them.

A key method by which buyers and sellers can seek to deal with residual or inherited risk and liability is through the structure of the transaction itself - namely, whether the deal is structured as a share sale or an asset sale. In the prevailing market conditions, it is likely to be asset sales that drive the majority of M&A activity, but it is nonetheless useful to consider briefly some of the advantages and disadvantages of each.

A share sale, whether partial or outright, in the mining company itself has certain advantages over an asset sale. These include: simpler mechanics resulting potentially in fewer consents; continuity of management; and, depending on the tax treatment of the company, preserving any tax losses in the mining company for the benefit of the purchaser’s group.

On the flip side, an outright acquisition of shares in a mining company can bring with it unwanted assets and liabilities, requiring a much more complex due diligence process to identify precisely what is being acquired within the target company. Some “pre” and/or “post” acquisition restructuring may also be required as a result of that due diligence, extending the transaction period.

For their part, asset sales have the advantage of providing more of a clean break between the seller and the buyer. There is a more simplified due diligence process for the buyer, who can focus on the detail relating to the specific assets, rather than the operations of an entire company. Consequently, assets deals can, from a due diligence perspective at least, be more straightforward.

However, some disadvantages lie in the inevitable need to obtain consent for transfer of the asset and assignment of associated licences, permits and agreements. Operator issues need to be addressed, necessitating the transfer of mining operations contracts or a negotiation of new contracts from scratch. Also, the mechanics of transfer are more complicated in asset sales than in share sales. It typically requires more documents and steps to be taken to satisfy local jurisdictional issues, associated contracts, and permits. For example, under current Indonesian mining regulations, a transfer of a mining licence is only allowed if it is to an affiliate (i.e. to a company which is at least 51% owned by the holder of the mining licence). In fact, from a strict reading of the Indonesian mining law, mining licences cannot be transferred to any party.

### SOME TOPICAL ISSUES IN M&A

**Identifying and addressing resource nationalism:** Both as a phrase and as a reality, resource nationalism has embedded itself in the minds of most mining industry professionals in recent years. It is consistently described as one of the key issues faced by mining companies. But what is it? In the broadest sense, it is any action taken by a host country in order to secure greater control over natural resources within its territory and/or to increase its share of revenue from such resources.

The methods vary widely: from windfall taxes to more stringent and onerous conditions for the granting of permits and licences; to export bans, foreign investment restrictions, local content requirements and equity divestment obligations; to outright expropriation and confiscation of assets and property. Examples of mineral-rich countries affected by resource nationalism in the past few years include:

- Indonesia, Mongolia and Zimbabwe (foreign investment restrictions, equity investment and local indigenisation obligations);
- The Democratic Republic of the Congo (renegotiation of existing contracts);
- Guinea (increased taxes); and
- Australia (proposals for increased taxes).

Of equal concern to investors is the ability of host nations to propose new policies at any time. For example, Zimbabwe’s government recently announced plans which include compelling Zimbabwean mining companies to use their concessions or lose them.

The vulnerability of M&A parties to resource nationalism is significant and it is difficult to handle within the scope of sale and purchase documentation. From a purely commercial standpoint, no seller could be expected to accept any degree of risk or liability arising out of possible future government action.
It is therefore incumbent on buyers to ensure they fully understand past practices and policies applicable to mining in the country in which they are seeking to invest and to carry out due diligence to ensure the target project will withstand scrutiny in any review that the host country may conduct. For example, where foreign investment restrictions or divestment obligations have applied in the past, finding appropriate local partners and forming solid partnerships may be a simple yet effective mitigant.

One way in which buyers and investors can proactively seek to mitigate political risk is by use of bilateral investment treaty (BIT) protection.

This is a treaty between two contracting states to protect investments by nationals of either state in investments hosted in the other state. Although negotiated country-to-country on a bilateral basis (and therefore each one is slightly different), BITs are relatively uniform in the protections provided for investors. These include fair and equitable treatment as foreign investors on terms no less favourable than those afforded to host nationals or nationals of other states and, most importantly, protection against and compensation for expropriation or nationalisation. In addition, BITs provide investors with protection under international law and can give rise to a direct claim against a host state, often before an international arbitration tribunal such as the International Center for Settlement of Investment Disputes. Therefore, it may be sufficient for an aggrieved investor to resolve any unfair treatment merely by threatening to take proceedings under a BIT rather than actually doing so, as this can reflect just as badly on the host state’s reputation and attractiveness to other foreign investors. Investments can be structured to take advantage of a BIT both at the commencement stage of a new project, but also by way of restructuring once a project is already underway. For example, when a buyer invests in an existing project.

Appropriate and holistic due diligence on any transaction is required in all aspects of the company from in-depth legal, human resources, environmental, technology, tax, accounting and risk & insurance.

The Willis Mergers & Acquisitions team operates with a standard insurance due diligence scope which delves beyond the ‘routine’ exposures. There is an active focus on relevant and material areas using global mining and international specialists to feed into diligence delivery, providing the requisite sector focussed insurance knowledge integral to the investor, lending banks and the target.

Guidance includes:
- Cover structure and its regional positioning in line with the global insurance market from best practice knowledge.
- How the transaction will affect the current insurance and risk transfer arrangements and how current costs of insurance align with the present market conditions.
- Appropriateness of cover for the target, introducing cover recommendations including new insurance solutions and identifying potential cost savings.
- Legislative requirements and future regulatory regimes pending on the sector influencing insurance buyers.
- Does the transaction or the target face any sanctions or political risk issues?
- Historical liabilities that the purchaser may acquire whether this be from an environmental/employer or directorship perspective.
- Contractual insurance requirements and the implications this has on current and future insurance arrangements from a structure and financial basis.
- Self-funded losses and insured claims, both open and closed, assessing the cost of losses retained on the target’s balance sheet and providing guidance on how this may have an impact on the future costs. With a depth of understanding in the sector, a benchmark can compare the target’s loss history with other companies providing key trend analysis and highlighting risk mitigation areas.
- Clauses in the sale and purchase agreement to determine appropriateness to the transaction from an insurance perspective and effectively proportioning the liabilities between the parties or identifying insurance requirements to deal with these liabilities.

From a corporate buyer perspective the work stream is not only crucial to the transaction but also to assess the impact of integration of the target in to the purchaser’s insurance programme if that is indeed recommended.
**An acquirer must establish:**

- If the acquisition will change their risk profile and how insurance solutions can best accommodate this.
- How it will affect the buyer’s insurance programme? This could be from a cover structure, insurer or financial perspective.
- Will the programme insurers be able to/have appetite to include the new company if it changes the profile or operates in territories where they cannot provide cover?
- How will the acquisition affect the programme in general (if it is the same type of business/risk profile)?
- If the target’s claims experience is bad, would the purchaser programme be exposed at completion or after following a period of risk management?
- How will the sale and purchase agreement deal with pre-completion liabilities and what does the purchaser need to do (from an insurance perspective) if they are acquiring them?
- What about other liabilities that the purchaser may acquire? For example, any historical environmental issues and latent diseases associated with the industry.

From a sell-side perspective, insurance vendor due diligence (IVDD) has been developed to streamline the transaction process; to remove issues that may be identified during the buyer review; and to professionalise the provision of insurance details in the auction environment. Mirroring the work undertaken on legal, financial and commercial VDD, Willis vendor packs are now recognised by the corporate communities.

**Part of this is addressing:**

- Present and provide comment on the insurance, risk management and insurable litigation issues of the company.
- Detail exposures to past, current and potential liabilities and the suitability of the current and past insurance programmes, including insurers’ security ratings.

- Identify uninsured risks providing analysis on the extent to which there is a need to insure those risks to make any purchaser aware of any future financial requirements or potential exposures.
- Analyse past and current insurance claims.
- Comment on any findings which might impact the transaction including sanction and other material restrictions.
- Provide benchmarking commentary on the current arrangements against other organisations with a similar risk profile, based on mining sector specialist experience.
- To provide recommendations on arrangements post-completion of the transaction including a new programme design and an estimation of the likely associated insurance issues and costs going forward.

**The benefits to pre transaction preparation are:**

- A well-managed and transparent process producing confident bidders, increased competition and therefore better offers.
- Retaining control of the process (timetable, information disclosure, format of data, Q&A, early warning of potential threats).
- Reducing management time and cost during disposal process - VDD is designed to answer all the questions a bidder may ask in the first instance.
- An independent report will be produced with none of the inherent conflicts associated with using current advisors.
- Providing assistance with any separation and transition insurance arrangements - including with regards to employee benefits workstream.
- Reliance can be flipped from vendor to buyer upon completion.
- No requirement for buyer due diligence to be undertaken as VDD can be accepted as independent and reliable.
- Confidentiality can be maintained away from any current service team.

Successful transactions do not just end at completion there needs to be clear plans and resilient processes for integration, whether into an existing business or even just to a new management style. Insurance is a key part of this and maintaining an effective risk transfer mechanism during this period is vital to business continuity.

The value driven out of insurance due diligence work, whether buying or selling, means that the consolidated report provides all the required information for the insurance piece can be passed over to placement teams. This process therefore avoids duplication of risk and exposure identification from both the brokers and the target’s risk management team.

With such testing times and no room for error, the transactions set to take place in 2014 (whether buying or selling) will require thorough due diligence, strategic thinking, evaluation of risk versus financial reward and robust detailed integration or segmentation plans. Any short cuts here could prove disastrous in an already unsettled industry.

Source: Deloitte Touche Tohmatsu Limited
**Licensing and permitting:** At the very heart of every project, licences and permits are a critical consideration in any mining M&A deal. Put simply – no licence, no project. Clearly, a key focus for buyers and investors should be understanding the applicable licensing regime and establishing through due diligence that either the target company or asset has all requisite licences in force.

Close attention should also paid to the effect of the transaction on the continuing validity of licences and permits. Will any change of control provisions be triggered and what additional consents will be required to maintain that validity? Is there a risk of consent not being given or the relevant permit lapsing on a change of control? If so, the obtaining of consent should be built in as a pre-condition to closing the transaction. Similarly, in an asset sale, is the relevant licence capable of being assigned (it needs to be “transferred” from the seller to the buyer individually) and, if so, whose consent is required for this? What involvement of the seller is required to make this happen and what happens if consent is not forthcoming?

Recent experience in Indonesia has resulted in mining companies being required to register for “clean and clear” status to prove their concession areas do not overlap with those of any other mining permit holders. They have also had to prove that mining licences were issued in accordance with the prevailing regulations. Beware the investor in any Indonesian mining asset or company not having such confirmation and running the risk of competing title claims. Similarly of concern, the governments of Guinea and Democratic Republic of Congo have recently introduced mining legislation with broad provisions on the change of control of mining licenses.

**Reserves:** In early stage exploration projects, where assets are yet to obtain JORC (the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves) approval for example, reserve risk can be significant. Unrealistically high valuations for unproven assets is a common theme. An innovative approach, used recently in Indonesia, involved the investor providing a convertible note rather than pure equity. Repayment was secured by profit share from a related and already producing mine along with share security in that mine, which could be triggered in the event that JORC approval was not given for the level of reserves anticipated in the pre-production asset. Such risk-reward partnership models could be a useful way of mitigating this kind of risk.

**Environmental issues:** Familiarity and compliance with environmental regulations is imperative given increased requirements for mining companies to subscribe to higher standards of social responsibility. Although many buyers may be used to applying higher international standards than required in-country, this may not be the case for the target company or any joint venture partner. Consequently, buyers should be prepared to conduct detailed environmental due diligence to determine the level of compliance with environmental requirements, including engagement with local communities affected by mining operations. It is only on the basis of appropriate due diligence that any indemnity/warranty protection in the documentation (including through insurance) can provide a degree of protection.

**Anti-bribery and corruption:** Many mining companies operate in jurisdictions that attract much greater anti-bribery scrutiny. Greater due diligence by buyers is taking place on past practices. Buyers fear uncovering something post-completion that turns out to have been in contravention of anti-bribery and corruption legislation, or in breach of US or EU sanctions. Asset deals may have less risk from this perspective than a share sale or joint venturing deal, which may hold a risk of perceived complicity in any unlawful activity.

No protection in documentation can be as effective as detailed and thorough due diligence as to past activities, along with adoption and enforcement of zero tolerance towards bribery and corruption.

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“Some juniors now have less than six months’ run time – a situation that may fuel acquisitions or result in corporate failure.”

*Deloitte ‘Tracking the trends’*
MITIGATING AGAINST RISK IN M&A DEALS

While there is no such thing as a risk-free mining M&A deal, there are some practical steps that can be taken to mitigate the exposure of risks and liabilities. A critical exercise in the approach to any M&A deal is due diligence. In the context of mining in particular, this exercise takes on increased significance (both for buyers and potential providers of debt and equity) and should be carried out beyond traditional standards. Time and effort should be spent on conducting detailed diligence in all disciplines – legal, regulatory, technology, human resources, environmental, commercial, technical, tax and accounting.

Consequently, attention should be paid to assembling a true multi-disciplinary team comprising lawyers, consultants and technical specialists, finance and accounting experts, insurance and tax specialists. Buyers should not rely on a single set of advisers alone. The findings of due diligence will allow the buyer to determine the true risk profile of the target and assess the extent to which protection can be sought by means of representations, warranties and indemnities in the sale and purchase documentation. Beware though of the real likelihood or value of this in the commercial context of the transaction. In current market conditions, where there is disparity of valuations between buyers and sellers, a seller that has no option but to sell may be prepared to do so on the basis of a buyer’s lower valuation in return for a clean walk-away, with little or no warranty protection given. From a buyer’s perspective, they must consider whether the discount is worth the absence of comfort.

Even with warranty protection, consider carefully the value of that protection. Does the seller have an adequate balance sheet to stand behind the warranties that it is giving? Or is it a special purpose vehicle with little or no real substance that might be stripped of cash and wound up shortly after the deal is closed? Is the support of a company with a larger balance sheet required for the warranty protection, either by acting as warrantor itself or providing a parent company guarantee? Enforcing warranties can be expensive and there may be difficulties enforcing a judgment. It may be possible to reduce this risk through retention payments, escrow accounts and use of offshore structures.

A final word on the benefit of local partnerships. In many jurisdictions, relationships with local companies are not only desirable but essential from an operational perspective, to comply with foreign investment or local content requirements. The time it takes to identify potential local partners and to develop relationships should not be underestimated but can be invaluable in ensuring successful on-the-ground operations, engagement with central and local government authorities and relationships with local community. Whether acquiring a project outright or investing into a project, some of risk and liability can be mitigated and apportioned by ensuring the involvement of a committed local partner. In certain jurisdictions, such as Zimbabwe, finding good local partners is critical for the success of a project as it will be a part of mandatory local indigenisation requirements.
POLITICAL RISK

Globalisation has led to a surge in commodity demand and, while the fortunes of specific commodities will rise and fall with market speculation, the growth of cities has led, and will inevitably lead, to greater demand for raw materials. This demand is pushing companies and investments into new jurisdictions, but those jurisdictions are often laced legal uncertainty.

One of the principal characteristics of successful companies operating in frontier markets is their ability to identify risks and then deal with them effectively. How do we know what is effective or appropriate due diligence? The selection of an experienced international law firm is a good start but how about where the rubber hits the road, who do you select as the right in-country legal advisor? Too often, the intricacies or flaws of an opaque legal system are only truly explored for the first time when issues arise. Discovering it is illegal to suspend or curtail operations on the steps of the courtroom is too late.

A company’s profitability or even survival is determined by its capacity to recover from those setbacks. Resilience is not dealing with one event but a series of events or difficulties.

From harsh experience, political risks are better understood now than they have been in the past and companies are more familiar with the risks inherent in international investments. However the frequency and severity of political risks continues to surprise. In fact, since the last publication of the Mining Risk Review we have seen several nationalisations, including the Papua New Guinea government’s action at the Ok Tedi mine.

Resource nationalism: While, in its annual review, EY may have moved resource nationalism from its top mining risk down to number three in 2013, resource nationalism has not gone away. The phenomenon of resource nationalism continues to spread across the globe and, while governments may be extremely keen to attract foreign direct investment, that does not mean the same government will not change the rules at a later stage – or wish it had not “given away” licences as easily. Financial imperatives have affected government attitudes throughout 2013. For example, the Australian government has relaxed its approach and reduced its mining tax in a bid to maintain investment in the country. The Guinea government too has reduced its profit tax from 35% to 30% and its bauxite tax from 0.55% to 0.15%. However, it has not been a one-way journey in 2013. At the same time, the Mongolian government has increased its stake in mining operations and it has not been the only one to do so.

One of the features of political risks is how quickly a single event can trigger a series of events which then escalate. The Arab Spring was a global example of that, but it is common in individual sectors, such as mining, too.

In its many guises, resource nationalism will continue to present mining firms with difficulties in establishing important relationships and viable contracts with their host countries. Despite signs that some of the more business-hostile governments are endorsing initiatives to attract and secure long term investment, it is clear that in other cases import and export restrictions, testing tax structures, beneficiation and mandated government ownership remain a persistent risk. Highlighting the risk is the case of Swiss-run tin and zinc mine whose deposits were nationalised in Bolivia back in 2012.

“Half of the industry’s 40 largest miners by market capitalisation have the bulk of their operations in emerging countries – the most ever.”

PwC
The decision followed a statement from President Evo Morales urging all governments, including his own, to nationalize their mineral extraction industries and their utilities. The ongoing dispute is typical of business operating conditions in Bolivia and the government has demonstrated consistently that nationalisation is a preferred method for conflict resolution.

Measures can be taken to help insulate an organisation’s assets and investments from nefarious policy-makers. Chief amongst these is ensuring that the principle decision makers in any organisation have a profound understanding of the current and any future government’s position with regards to their natural resources, foreign direct investment and their relationship with state-owned enterprises. A mining facility is more likely to succeed if it is able to manoeuvre into a position as transparently as possible where it is viewed as an integral part of both the local and national economy. Key to this strategy is communicating the socio-economic benefits of any local community initiatives or associated international trade agreements.

However if the capital is exhausted and promises are not delivered, the operation may face an entirely new challenge. A convergence could emerge: At the point where the local community is dissatisfied, management time is being taken up, productivity starts to drop, the government (be it local or central) could casts a critical eye over the project. The same government, which increased royalties, is likely to have made election promises, often bankrolled by the anticipated revenues. As the revenue stream dries up, the government may be under pressure to ‘review’ or even reallocate the license. The firm may then be faced with significant exit costs to unwind hedge agreements, close bank accounts and lay off staff.

“Clashes over the terms of mineral contracts have become a political lightning rod in many resource-rich countries. A series of bitter disputes in recent years – some ending in lengthy litigation, project cancellation or even expropriation – has unsettled investors and global markets. These disputes call attention to the fragile and complex relationship between companies and their host governments that characterizes the extractives sector.”

Chatham House

Bilateral investment treaties go a long way to offering protection. However ongoing litigation and arbitration in Venezuela, Argentina, Nigeria and Indonesia all demonstrate that court settlements are expensive and provide an ill-fitting solutions to ownership disputes. There are several bodies for hearing disputes but the main vehicle being the International Centre for Investment Disputes has more than 150 outstanding disputes some dating back more than 12 years.

Secondly, a misunderstanding of the threats to direct and indirect suppliers, lack of effective intelligence, risk evaluation or poor risk analysis can disrupt global networks halting both sourcing and procurement. Thirdly, managing workforce challenges need to be integrated into supply chain risk mitigation.

“The key point is that one event can quickly escalate and lead to a chain of events which make a project commercially unviable.”

Willis
Largely unaffected by the global financial crisis, Australia has been
riding the wave of a natural resource boom fuelled principally by
demand for raw materials in China and also rising commodity prices.
However, the accepted wisdom is that the mining boom is now over.

If the mining boom is not quite over, it is certainly shifting gear and
entering a new phase which will see lower capital investment in
mining despite more ore being shipped. There will be fewer jobs:
fewer people are needed to ship the ore than build the infrastructure.
The economic multiplier impact of mining – of how one mining job
contributes to the well-being of other sectors – is therefore on the
wane. Unemployment is expected to rise to 6.25% by the middle of
next year, up from 5.7% at present.

Also, as slowing economic growth weighs on tax revenues, the
budget deficit is set to increase while wages remain high. Australia’s
minimum wage is around AUD 16 per hour, compared to around
AUD 7- AUD 8 per hour in the US and AUD 1- AUD 2 per hour in
China. The cost of Australian engineers is around AUD 170 per hour,
compared to AUD 132 in the US and AUD 129 in the UK or AUD 77
in Japan.

The recent weakening in commodity prices have been offset to some
degree by the falling value of the Australian dollar against the US
dollar, however the level of mining investment is likely to decline
substantially as existing projects are completed and it would not be
surprising if mining investment relative to GDP declined by 3% or
more in the coming years. While a decline of this magnitude might
be manageable, it will require a rebalancing of the economy.

The Minerals Resource Rent Act (MRRT) is a tax on profits
generated form the exploitation of non-renewable resources.
The tax, levied on 30% of the ‘super profits’ from the mining of iron
ore and coal in Australia, was introduced on 1 July 2012. A company
pays the tax when its annual profits hit AUD 75m.

The MRRT has been seen by many in the
mining sector as a further hindrance to
foreign direct investment. Forestcue Metals
Group recently challenged this tax arguing it
discriminated between states and interfered
with the rights of states to control their
mineral resources. However, this challenge
was dismissed by the High Court.

Since then, the government has been making
moves to abolish the tax. On 24 October 2013,
the government released an exposure draft
legislation repealing the mining tax effective
from 1 July 2014 and confirmed it intended to
axe a raft of other measures introduced by the
previous government in association with the
MRRT regime.

The repeal of the MRRT will likely restore
investor confidence and also remove a significant
regulatory and compliance burden on the iron
and coal mining industries. In the last decade,
Australia’s mineral resource industry has gone
from contributing around AUD 4bn a year in
company tax and royalties to almost AUD 20bn
a year. It has paid almost AUD 117bn in company
tax and royalties since 2006/2007.
AROUND THE GLOBE

In contrast to the situation in Argentina, Russia or Venezuela, the trend in Africa has generally not involved outright attempts at asset nationalisation. Unilateral revisions of mineral development agreements (MDAs) or stability pacts have been rare, and are likely to remain so. With some high-profile exceptions, most African governments’ attempts at extracting a greater local/state share have fallen short of the crude expropriation witnessed on the continent and elsewhere in previous decades.

Yet legislative and administrative uncertainty associated with mining in Africa has increased. Resource nationalism has, if anything, accelerated in the wake of the 2008-2009 financial crisis, as resource-rich but cash-poor African sovereigns used various strategies to augment the benefits they derive from their extractive sectors.

African officials (and voters) generally feel that the financial benefits of the decade-long commodities boom have been captured disproportionately by investors. The fall in current price levels does little to erode this sentiment. For their part, firms argue that governments are already the greatest beneficiaries of mining revenue streams, ahead of the firms that provide capital and technology – while reiterating the need for long-term fiscal and regulatory certainty to enable expansion and capital expenditure planning. As a result, negotiating the investor-government balance of interests will become more challenging.

Zambia, Tanzania, Ghana, Ivory Coast, Namibia, Mali and the Democratic Republic of Congo (DRC). Where royalty rates have been increased. Gold-rich Ghana’s 2012 budget also raised corporation tax from 25% to 35% and cut capital allowances from 80% to 20%.

South Africa. The relative calm attending 2013’s ‘strike season’ obscures significant shifts within familiar industrial relations structures; along with factional contests among union leaders, these decrease predictability in future labour relations, while the wage growth-productivity gap continues to widen inexorably. Greater new mining investment in South Africa is being deterred by the unfavourable legislative and regulatory environments, and heightened labour risks. While the ANC and government argue that policy and legal requirements are reasonably clear, investors certainly see government policy towards mining in general - and coal in particular - as requiring urgent clarification.

Source: Oxford Analytica
Kenya. By contrast, the new government recently abandoned efforts to secure 35% equity stakes in projects for fear of inhibiting investment flows into Kenya’s nascent mining sector.

Mexico. A proposed increase in mining tax, submitted as part of President Enrique Pena Nieto’s fiscal reform initiative in early September 2013, has raised concerns among mining firms over the consequences this might have for planned investments. Mining is a strategic sector that has shown positive growth in recent years. However, as in other countries in the region, it is also the source of - less visible - social discontent.

Argentina. Argentina’s experience in the oil and gas industry provides a warning for other extractive companies. Although the government is increasingly desperate to attract hydrocarbons investments in order to curb soaring energy imports, efforts to favour international oil companies may play badly domestically given its nationalistic stance to date. The government taking office in 2015 will likely take a more pragmatic approach. Further, legal controversies surrounding YPF’s renationalisation and a deteriorating business environment in a climate of high political risk could deter the foreign partners needed to exploit Argentina’s unconventional reserves, particularly in the absence of obvious major export markets.

Kyrgyzstan. Kyrgyzstan’s mining sector has become the battleground where state authorities, local communities and private mining companies, vie for supremacy. Resource nationalism will likely remain limited in the near term because of the lack of local financial resources to do so and poor transparency in the extractive industry, and because nationalisation would limit technology transfer to Kyrgyzstani mining companies. However, changes in the fiscal regime expose miners to the risk of losing licences and permits. Social tensions are mounting as local communities feel that miners have left them to deal with environmental damage.

Mongolia. Political obstacles appear to be souring the investment environment for Mongolia’s foreign partners through a perceived threat from ‘resource nationalism’ in the mineral-rich country. Rio Tinto has come under pressure to cede the government a majority share in Oyu Tolgoi; and politics will become more radical if voters think politicians are failing to deliver given the revenue generation potential from mining.

RECEDING TIDE EXPOSES RISKS

Under these circumstances, the boards of major mining companies have been re-directing corporate strategies away from ambitious capital projects. Much of this shift has been driven by the uncertainty surrounding potential economic reforms in China and signs of overinvestment in capacity in certain commodities. At the same time, a number of companies continue to experience cost overruns and expensive project delays. Companies may be tempted to achieve cost reductions by cutting back risk management outlays, according to Oxford Analytica.

However, this is fundamentally self-defeating. The costs saved are marginal but leave enormous potential exposures. Political risk may be insufficiently assessed - in both developed and developing markets. At the same time, as prices fall from cyclical peaks, previously stable jurisdictions become more unpredictable.

As the tide goes out on the supercycle, the drop in prices exposes political risks that may have been previously tempered in a high-profit environment. Further, national expectations are not in sync with the supercycle: the time lag between public hopes for what mining profits can bring and the mining companies’ ability to deliver creates political friction that can erode the host relationship.
A relative downturn might be expected to lead to government moderation and a rebalancing of bargaining power in favour of foreign firms. Yet, just as the resurgence of resource nationalism initially lagged the 2000s commodities boom, it is now likely to outlast the cyclical peak in prices.

Indeed, as Oxford Analytica warns, firms might experience significant distortion or disruption for several reasons:

- The typical time-lag between a softening outlook and state responses means that most governments will be ‘behind the curve’ and continue to push on fiscal issues, social development contributions and beneficiation investment for months or years after firms’ real margins make these claims unworkable.
- Governments may respond differently in any coming supercycle downturn to the way in which they tended to respond in 2008-09. In the context of slowing Chinese demand, governments might consider they have nothing to lose by being assertive at the tail end of a not-soon-to-be-repeated supercycle, with potentially dangerous consequences for invested firms.
- Furthermore, as narrowing margins lead to labour layoffs, projects being frozen or postponed, or production targets being revised, this can open space for fiercer and more populist political rhetoric than during ‘the good times’.

There may be a distinction between new projects – where there may be a shift in bargaining power between investor and state – and sunk projects, where the state will retain leverage despite the cyclical downturn.

REMAINING RESILIENT

How can mining companies promote resilience in this environment? Shareholder pressure to cut costs in some exploration outlays makes good sense in an oversupply market. However, cutting back on either internal or external political risk capability, or reducing either insurance or capital reserves in this context is potentially self-defeating.

Innovative global political risk analysis tools for mining firms can provide a means of mitigating losses in a more difficult macro environment. For example, Oxford Analytica and Willis have developed a powerful tool that puts a price on political risk in order to quantify what these risks represent for individual companies in financial terms. The tool is called VaPoR, or ‘value at political risk’. It draws on Oxford Analytica’s geopolitical analysis, the modelling skills of Willis Analytics and the political risk experience of Willis Financial Solutions to help boost resilience by putting a number value on risk.

Regardless of the means used to evaluate political risk, we argue the current environment will lead to more volatility and mismatched expectations, raising the prospects of unstable macro conditions. Governments, labour unions and host communities – all of which have developed high expectations of what returns they should receive in a high price environment – are unlikely to temper their hopes that mining companies can help deliver them from difficult economic circumstances. By questioning previous assumptions about host jurisdictions, re-evaluating sources of political risk and maintaining adequate capital reserves and insurance, firms are more likely to successfully face this continuing pressure.

An open, integrated approach to insurance, analysing and mitigating political risks can help reduce the likelihood of the financial shock that aggressive resource nationalism can bring.

One of the least understood solutions may come from political risk insurance. A political risk policy simply transfers political risks from the insured to the insurer. The market which provides this cover continues to expand and the arrival of new entrants means now is a good time to explore what options may be available. If resilience is the capacity to recover quickly from difficulties or adversities, political risk insurance may well be the answer.
“The barrage of new legislation around resource nationalism, employment and migration, and environmental compliance, and an increase in reporting requirements mean that the costs and risks associated with compliance have increased.”

EY
Mining, like many sectors, is very much dependent on a robust supply chain to ensure reliability of operations and delivery of business objectives. The need to manage supply chain risk has never been greater, with critical dependencies located at both upstream and downstream operations. Recent surveys, such as Allianz’s 2013 Risk Barometer of Global Risks, have highlighted that one of the key risks identified by most of the global companies is related to business interruption, resulting from a disruption in the supply chain.

However, very few sectors have taken on board the lessons learned from recent catastrophes such as Fukushima in Japan, the Thailand floods and Hurricane Sandy in the US. Many companies and organisations today continue to hold the minimum in terms of buffer stocks. Global sourcing remains very much a key element of the procurement strategy, with local supply chains being ignored in the process. This gives rise to logistical pinch points, such as ports and rail routes. Were these routes to be affected by natural catastrophe events or situations of geo-political turmoil or industrial dispute, ingress and egress situations would arise and the flow of supplies would come to an almost immediate halt. Major physical or financial losses arising from operational risks in key supply chain bottlenecks has meant resulting interruptions are often lengthy and the losses significant.

Furthermore, as Holman Fenwick Willan report, there are some additional risks associated with investment in emerging markets. The absence of alternative supply chain links, regional piracy, employee security issues and actions by local authorities have been resulting in lengthy and costly interruptions.

**GENERIC SUPPLY CHAIN RISKS**

Supply chain risks will vary from one mining operation to another. Common causes are not limited to but can include some of the following:

- **Remoteness of the mine** – this leads to a long chain of supply increasing the likelihood of parts and supplies being lost/delayed in transit; this trend will increase as operations move to more remote areas as deposits become harder to find.
- **The reliability of economic, community, sovereign, natural and infrastructure environments** – the breakdown of these infrastructures (trending to greater volatility in emerging markets, climate change, increased activism, political instability) will in many cases affect mining companies.
- **Key supplier dependencies** – loss of supplier for critical items, e.g. leaders in technology exposed to failure of bespoke systems.
- **Failure to hold** – high value rarely used spares affects availability when actually needed.
- **Socio-political pressure** – to ‘buy local’.

> “World trade and maritime transport are fundamental to sustaining economic growth and spreading prosperity throughout the world, thereby fulfilling a critical social as well as an economic function.”

*International Maritime Organisation*
EFFECTIVE SUPPLY CHAIN INSURANCE COVER
It is clear supply chain management is critical to a typical mining operation in terms of services, parts and chemicals. Mitigation can cover activities such as increasing buffer stocks, increasing the level of dual sourcing and critical supplier buy-out. Mining companies have traditionally used CBI (contingent business interruption) cover through the means of sub-limits on their property programmes to provide protection from a loss of supply where the supplier has incurred physical loss or damage. However, in many cases these traditional CBI-related solutions have not been sufficient. Recent natural catastrophes have provided examples where disruption to the supply chain was caused as a result of failure of utilities or failure of the transport network systems when or where no “damage” at the suppliers premises had occurred. Consideration and risk management attention must also be given to non-damage business interruption as a result of a loss of critical supplier(s).

Stand-alone supply chain interruption (SCI) policies have emerged in recent years, which focus on both the property damage and the non-property damage related risks. The insurers providing these solutions will often not require the naming of key direct suppliers and supplies. Supplies can include services (such as computer services and utilities) as well as tangible property such as components and goods suppliers. The cover can also apply to losses arising from both total stoppage and partial reduction in the amount supplied. The policy trigger is based on the reduction of supply, and the amount of indemnity is based on the loss of output during the indemnity period, rather than a reduction in turnover.

Typical perils which are relevant to mining environment are:

- Industrial dispute
- Supplier insolvency
- Ingress/egress
- Change of supplier ownership
- Civil authority closure orders
- Political (including import/export restrictions and confiscation)
- Service interruption (including IT failure) at supplier premises.

For the non-damage aspect of cover to be underwritten, the insurer can insist on being a participant on the main property damage programme. It is also an important feature that these standalone SCI policies can provide additional capacity to existing CBI limits, as well as provide cover for non-damage related perils. Consequently, a standalone policy can act as an excess layer to the existing CBI cover.

CAPTIVES AND THE SUPPLY CHAIN
The use of captive insurance as a partial solution to supply chain exposure can offer a number of benefits:

- It provides better access to supply chain exposure data that supports a better analysis of the risk.
- It enables the development of more effective supply chain strategies through better understanding of the exposure.
- It allows a business to use underwriting profits generated through other lines of cover to support supply chain protection.
- The captive can be used to “plug” gaps in existing cover and can potentially be used to protect against both supply chain credit and disruption risk.
- To encourage a broader and more efficient use of existing captive arrangements

Captives can represent an invaluable and innovative option as part of a modern supply chain risk programme. As miners continue to consolidate their operations, supply chains will remain complex and interconnected and we can expect the level of risk to remain high in the foreseeable future.
80% of supply chain managers do not see their supply chain as an enabler of business strategies within their organisation, according to recent research by Hitachi Consulting.

Analysing the current attitudes of supply chain executives and managers and spanning nine European countries, Hitachi Consulting’s survey aimed to identify the extent to which supply chain management activities and priorities are aligned with a strategic transformation agenda. The survey found more than half of the respondents (55%) do not regard their business’s supply chain as a fundamental source of business value and competitive advantage. Almost one-third of respondents (29%) see it as purely an operational function.

Hitachi Consulting warns these figures are far from reassuring.
For the most part, it seems senior executives understand the strategic importance of the supply chain, yet the managers who deal with the supply chain on a day-to-day basis do not. A supply chain that does not support the overarching business strategy and which does not deliver competitive edge (and which is not going to deliver a material change in performance in the next five years) is clearly not a desirable asset.

The survey also found only a third of respondents (33%) believe their organisation’s supply chain would deliver an improved customer experience in the next five years. Almost half (45%) of respondents do not believe their organisation’s supply chain will deliver increased profitability and 46% do not believe their organisation’s supply chain will deliver a reduced working capital requirement. Only 43% believe their organisation’s supply chain will improve sales revenues in next five years.

Source: Hitachi Consulting
LOGISTICS: THE MARINE MARKET

For the mining and minerals markets, the ability to move their commodities and product around the world is crucial. Failure to deliver goods can result in a breach of contract and become a catastrophic event. Protecting access to markets is critical for long term success and plays a pivotal part in the risk strategy of any mining business. Consequently, events in the marine market can have a massive impact on the bottom line.

Back in 2007 the shipping industry was enjoying good results, however by 2013, ship owners were facing a much tougher environment. Costs were up and rates were down. There has also been the arrival of new tonnage that has increased competition among ship owners vying for the shrinking volume of trade. A lack of finance has driven much of this downturn. Without access to finance, businesses have nothing to trade and nothing to move. Standard & Poor’s recently summed it up: “In an industry that’s highly sensitive to economic conditions, ship charter rates have fallen to between 30% and 80% below their 10-year historical average in parallel with declining economic activity. High operating costs, particularly for fuel, are also depressing their earnings.

“What’s more, a lack of supply discipline in this fragmented industry means ship operators accelerated ordering new vessels in years when shipping markets flourished, so these vessels are now hitting the water at a time when trade demand is subdued. In the past 10 years, the global container ship and dry bulk fleets have more than doubled, while the tanker fleet has grown by more than 50%.

“Adding to these difficulties, ship operators are now finding it increasingly difficult to refinance existing loans. Banks are imposing tougher conditions for lending and charging higher premiums.”

Another question for the marine market is what will happen to freight rates in the longer term? The advent of shale gas production on a large scale in the US is leading many to question the status quo. The cost of power in the US is expected to fall in the next decade. A reduction in energy costs could see more manufacturing taking place in the US. This, in turn, could lead to a reversal of global freight traffic where raw materials head to the US while consumer goods are shipped from the US to serve the fast-growing Chinese middle class. In these challenging times, no-one has wanted to “sit on” stockpiles so the shipping market has been forced to adapt to the increasing use of “just in time deliveries” and has come under increased pressure to deliver in the precise time-frame demanded.
THE CARGO PICTURE

Business interruption, and its financial consequences, has become a major threat as suppliers juggle the risk of a breakdown in the supply chain with the desire not to hold stock unnecessarily. Back in 2012, “Superstorm” Sandy proved a seminal moment as the marine cargo sector was faced with some record losses. In 2013, Typhoon Haiyan in the Philippines showed the world just how vulnerable the supply chain can be, and how susceptible to major natural catastrophes it is.

Before that, the catastrophic events in Japan and Thailand during 2011 brought the importance of contingent business interruption (CBI) cover sharply into focus, says Holman Fenwick Willan. These events highlighted the vulnerability of certain production processes (mining in particular) to the interruption of the global supply chain and the potential financial losses that can result.

At the time, market observers were asking whether the losses would be sufficient to impact future insurance premiums or terms and conditions. From a marine cargo perspective, the impact turned out to be less than originally suggested, as the marine cargo insurance markets were unable to impose rate increases thanks to the level of competition among these insurers.

There is a further development in that the marine market has continued to build ever larger vessels. The jury is out on exactly how large these vessels could become. There is rumour of 30,000 TUE Malaccamax vessels designed to transit the Straits of Malacca. It is likely that owners will have to compete fiercely to attract cargo for these behemoths and that will largely depend on consumer demand.

As such vessels continue to evolve, so to will the supporting ports and terminals. In India, the government has approved plans for major port expansion. Reports suggest there are about 46 projects under review representing a total investment of USD 14bn.

In the UK, the new DP World’s London Gateway started operations in the fourth quarter of 2013. Across the Atlantic, the Panama Canal is also undergoing a major expansion. Elsewhere in that region, Colombia is positioning itself as the gateway between North and South America. The future shipping industry will be facing new challenges of where their ships sail and what they carry.

In the insurance market there is growing concern around the accumulation of risk that these new mega-vessels will bring. Insurers concerns include the risk of huge contingency losses and the difficulty in assessing their true exposure.

ASIA

In recent years Asia’s insurance markets have changed from fringe to focal. The region today is expected to contribute more than half of the global premium growth for the next 10 years. As reported by the International Union of Marine Insurance, around USD 5.3bn – or one-third of global cargo transit premiums for 2011 were insured in the Asia-Pacific region.

There is an abundance of capacity for Asian cargo business in the region, which can offer up a USD 1bn in capacity and a strong appetite for commodity, project cargo and DSU business as well. Furthermore, Asian insurers are now positioning themselves as international players for business emanating outside their region.

By contrast, research from Lloyd’s of London has found the level of under-insurance in some Asian countries leaves them dangerously exposed to natural catastrophe risk especially. Superstorm Sandy and Typhoon Haiyan both served to highlight elements of uninsured risk, together with gaps in insured cover from supply chain and business continuity.

“Today’s global companies operate in a complex risk landscape that features traditional risks like fire as well as ultra-modern risks such as supply chain interruptions and cyber crime.”

Axel Theis, Chief Executive Officer of Allianz Global
EMERGING RISKS FROM EMERGING MARKETS

For those wishing to develop natural resources in emerging markets, an assessment must be made of the balance of potential benefits against the associated risks.

Supply chain management, and its risks in these territories, is a key exposure to business, according to Holman Fenwick Willan. The firm adds that, while supplier and customer insurance extensions have traditionally formed part of industrial special risk and all risk insurance policies, the issues and exposures arising from such extensions are continually changing and evolving. Damage to infrastructure such as the blockage of a strategic port facility can lead to major contingent business interruption losses as can an interruption to the supply of a utility. A single event has the potential to not only affect supply to a mine, but also the ability of a customer to receive the mine’s output. This “shock-wave” effect was a characteristic of the Varanus Island Terminal explosion in Western Australia. Remote locations, by their nature, have fewer options and more bottleneck risks.

The blockage of a major loading port results in delays to the shipment of goods loaded onto vessels in the port and the vessels themselves are rendered useless for the period of blockage. Both owners and charterers have potential claims for this period. Other claims arise from the lack of availability of vessels. Cargo may need to be redirected to an available port. This can be problematic if the blocked port is geographically isolated or has a unique or rare feature that makes it particularly suited to a certain type of vessel or cargo. Goods due into the port will either need to be stored, resulting in additional warehousing costs, or diverted to another port at late notice, resulting in additional transport costs. The impact of delay spreads further down the supply chain the longer the port is blocked.

The recent ban from China’s ports of the Valemax mega-carriers, capable of carrying 400,000 tonnes of dry bulk cargo, over fear of the impact on the supply chain and prices, highlights the issues that arise from a political decision to effectively block a port to a certain type of vessel or cargo.

Insureds should ensure that they are covered for blockages arising from industrial action and from political decisions by governments, as well as the more obvious “physical” blockages. Additional cover for delay in conduct or commencement of business arising from a port blockage and also dispensing with the requirement for the blockage to result from an insured peril are valuable extensions to the standard cover.

Piracy remains a significant threat to the global supply chain. While Somali piracy is reported to have declined, the risk still remains. When Somali pirates hijack a vessel, it remains for the owner themselves to pay to secure the release of the vessel, cargo and its crew. However, when applying the principle of general average, further cost and legal complication can arise between the vessel and cargo owners. Elsewhere, West African piracy is on the increase. In this region the target is not the bulk cargo carriers but the crew members but with the same commensurate effect on the supply chain. Issues also arise as to whether a company can lawfully negotiate with hijackers and whether the ransom payment is legal. The risks of kidnap and ransom also extend inland as well. Private security measures at mining facilities remain a significant additional cost to business, often making up for a shortfall in law and order in unstable jurisdictions. As well as piracy, vessel seizures by government and official authorities continue to occur: a South American country recently seized a seismic survey vessel; and a West African country recently seized some oil vessels conducting ship to shore operations alleging they required consent and authorisation. Certain borders, both internal and maritime, which have not been formalised, provide clear scope and opportunity for disputes and/or property seizures: Kenya and Somalia separately lay claim to a significant number of the same oil and gas blocks reportedly covering an area of 135,000 sq km.

Given the uncertainty in emerging markets, having adequate and appropriate insurance in place is key. These include cargo insurance (including war risk), political risks insurance, kidnap & ransom and piracy cover. Good professional advice and, in particular, a trained response consultant are invaluable to the victims together with sound legal and technical insurance advice on the associated compliance and regulatory aspects of such insurance claims.
THE SPECIE INSURANCE MARKET

- In the last 12 months the specie insurance market, used by mining companies for insuring valuable commodities such as gold, diamonds and platinum, has remained “flat”. In isolated territories, premiums have softened resulting in it being a “buyer’s market”.
- In addition to other insured losses in 2013, the largest single insured event was for approximately USD 80m of diamonds in Cannes, France in 2013. This however has not resulted in any increase in premium rates.
- The outlook for 2014 is that premiums will remain soft with the insurance market willing to offer broader coverage. With the pressure on commodity prices, margins and cost control, making it a good time for mining companies to consider alternative insurers and solutions to their existing arrangements and to consider alternative structured solutions, such as the use of captives.
- The London insurance market, and in particular Lloyd’s, has had a long history and experience in underwriting such insurance risks and has proved itself to be an innovative and competitive market, which can provide high sums insured and broad coverage. The market capacity today is around USD 2bn.

THE TRADE FIGURES

- Merchandise trade imports and exports in G7 and BRICS economies grew 1.4% during the third quarter of 2013, offsetting the contractions seen in the previous quarter.
- Merchandise trade rebounded strongly in major Euro area economies. In Germany, import and exports grew 4.7% and 4.6%, respectively, in the third quarter of 2013 following declines of 2.2% and 1.9% in the previous quarter. Growth also returned in France, with imports and exports up 2.2% and 1.8%, and Italy (by 4.4% and 2.1%).
- Merchandise trade imports and exports also grew in the US (by 1.4% and 0.5%) and the Russian Federation (by 0.7% and 4.4%). China’s merchandise trade surplus declined for the third straight quarter as growth in imports (2.3%) continued to outpace growth in exports (0.7%).
- Imports grew and exports contracted in Canada (by 0.1% and minus 0.8%) and the UK (by 1.1% and minus 2.3%). In South Africa imports (up 2.7%) continued to outperform exports (minus 2.4%), which fell to their lowest level in three years, resulting in South Africa’s largest merchandise trade deficit in the last eight years.
- Imports contracted and exports grew in Brazil (by minus 2.3% and 0.7%) and in India (by minus 7.3% and 9.8%). Imports and exports continued to contract in Japan (by minus 0.1% and minus 2.9%, respectively). Japan’s merchandise trade exports are now at levels not seen since the end of 2009, following six successive quarters of contraction.

Source: OECD November 28, 2013
RISK MANAGEMENT

WHAT BEHAVIOURAL TRAITS MAKE A MINING COMPANY RESILIENT?
Mining is a tough game and mother nature does not give up her bounty easily. Mining companies must understand and manage a broad scope of industry specific risks to extract the mineral bounty from within. Some companies do this well while others struggle. Why do some succeed in managing risk and others fail? There are some common behavioural traits of successful companies:

**A SYSTEMS APPROACH**

A well-defined systems approach to managing their business, with clear key principles that permeate the company from top to bottom. Essential principles include:

- Policy, commitment and leadership
- Planning
- Implementation
- Measurement & evaluation
- Review & improvement

The successful manifestation of such principles is driven through the establishment of standards which set out how the company will manage the mining operations. These standards communicate expectations, encourage accountability and promote consistency with a view to improving performance within critical aspects of operations. Standards emerge in key areas such as:

- Leadership and accountability
- Communication and consultation
- Statutory compliance
- People
- Risk assessment and management
- New project establishment
- Fit for purpose plant and equipment
- Systems of work
- Contractors and suppliers
- Selection of joint venture partners, acquisitions and divestments
- Emergency management
- Reporting, investigation and continuous improvement
- Assurance
Some standards are worth looking at in more detail:

**LEADERSHIP**

Strong and consistent leadership is critical to the success of any operation. Managers, superintendents and supervisors should visibly lead the management process by:

- Ensuring resources are appropriate for the level of risk
- Defining and communicating roles and responsibilities
- Acting immediately to correct non-conforming behaviours and physical conditions
- Taking appropriate disciplinary action
- Promoting risk awareness, good behaviour, and continuous improvement at every opportunity

A visual leadership programme defines leadership expectations in respect to time spent in the field “walking and talking” the culture of the organisation. The key expectation is for key leaders to spend more time in the field actively engaging with employees on matters which can affect the business as a whole. Many operations struggle to get senior staff out of the office and into the field to see what is really happening.

This is one of the greatest opportunities for management to gauge the level of risk at a given time. Management sends a strong message when senior people take time out to visit the field operations, engage with people on the job and challenge people to do better. The old saying rings true “what interests my boss fascinates me”. Strong leadership and a systems approach are the backbone of resilient companies.

**INTEGRITY IN PRACTICE**

Those mining companies which continue to thrive do what they say they are going to do. This means a commitment to resourcing and managing risk management programmes, major hazard management plans, procedures, standards and policies. Integrity must be driven from the top and embraced as one of the most important values in the organisation. Sadly, there are many mining companies with apparently impressive management systems but when you dig down it becomes evident that they have not been implemented at the “coal face”.

The successful mining company knows that, at any one time, the processes and systems they have in place are understood, working as designed and checked to ensure they are effective and suitable for the risk profile of the mine. Integrity within the organisation is the pillar that supports this state of acceptable risk.

**QUALITY**

Successful companies manage their business processes to reduce loss. The main objective is increasing productivity by decreasing the process variation, leading to defect reduction and minimisation of loss events. Management concepts such as “Lean Manufacturing” and “Six Sigma” are known process improvement methodologies used to support the effectiveness of the organisation.

Six Sigma is a process that applies to a single “critical-to-quality” component of a process. It is important to pay attention to the processes, because final outcomes or results are dictated by what happens during the process. When businesses create a better process, they eliminate opportunities for defects or loss events before they occur. By reducing the variation during mining and processing of product, it is possible for any business to achieve Six Sigma quality.

Lean Manufacturing allows a mining company to deliver reliability by maximising opportunity and efficiency. It focuses on lead time and reliable on-time delivery of product from the mine to the processing plant or customer.

Some companies only use Six Sigma for efficiency and effectiveness. Other companies just use Lean Manufacturing to save lead and cycle time, as well as to eliminate waste. Successful operations will use one of these processes to ensure they are managing their risk to a level that is as low as reasonably achievable.
RISK MANAGEMENT
A strong focus on risk management is the foundation stone of any successful mining operation. There are a number of techniques available to mining organisations to identify the risks in the operation and to design suitable controls to eliminate those risks. Some of the more common techniques include:

- HAZAN – Hazard analysis
- WRAC – Workplace risk assessment and control
- HAZOP – Hazard and operability studies
- FMECA – Failure modes and effects criticality analysis
- LTA – Logic tree analysis
- QRA – Quantitative risk assessment
- FTA – Fault tree analysis

Identifying risk and designing suitable controls are pivotal but ultimately worthless without effective implementation. So often, mining operations have highly developed risk registers and risk management systems but on checking in the field there is a disconnect between what is planned to be in place and what is really happening. There is often a poor understanding of risk controls in the workplace, poor implementation and a lack of robust reviews and audit systems to ensure the controls are working.

Companies can overcome such negative tendencies by adopting systems such as broad brush risk assessment (BBRA), which defines the management controls for all identified risks. In successful operations, these controls and associated actions have:
- Responsible persons and timeframes attached
- Are recorded within a corrective actions database
- Are monitored via a visual leadership programme
- Have robust inspection regimes at the mine and plant

Another great feature of a BBRA is the documented risk register which evolves out of the process. The risk register highlights the major hazards and risks within the operation allowing management to prioritise risk. Day-to-day task-based hazards are identified via processes such as Take 5 or Hazard Identification Tools and Job Safety Analysis. The BBRA also identifies the documents necessary to manage risk, these should include:
- Major/principle hazard management plans
- Procedures
- Forms/checklists
- Hazard identification tools
- Job safety analysis
- Visual leadership programme
- Task observations
- Critical risk control audits
As illustrated, successful mining operations have documented principle (or major) hazard management plans (PHMP) within their risk management system for each of the identified principle hazards at the mine or plant. These plans typically cover the following areas:

- Identification of hazards
- Control procedures
- Roles and responsibilities
- Communications
- Trigger action response plans (TARPs)
- Corrective action
- Review and auditing of the system

Assessing the effectiveness of a plan:

- **Hazards** – were external experts and a good cross section of the workforce involved in the initial process and subsequent reviews? Were all risk areas covered, for example, levee banks, rail embankments, cuttings etc?
- **Controls** – are they suitable for the level of risk, are they fully implemented and well understood at the operations level? Are the design parameters correct for the site conditions, is there adequate exploration data available on site conditions?
- **Roles and responsibilities** – are they defined in the PHMP and in job descriptions, is there specific training packages for each level of responsibility (often workforce training is done well but more senior positions are assumed to have the required knowledge about the risk which is not always the case)?
- **Communications** – does critical information get down to the operational supervisors level, does this happen consistently, are there documented communication protocols for the various levels of risk. Where hazards are identified, the nature of the hazard, and trigger limits for various levels of response action are communicated to operators and supervisors as well as being noted on mine plans?
- **TARPs** – are these easy to understand and read? Are they well communicated and readily available where required to be referenced? Are the actions suitable for the triggering events, is there a check loop to ensure they are followed?
- **Corrective action** – the site should have a corrective action register (database) where all actions are captured and responsibilities set and there should be a regular review process, automated reminders (for example, email) for actions nearing overdue status is best practice.
- **Review and auditing** – this is an important part of the process. There should be documented review and audit requirements set out in the PHMP. These should be both event and time based triggers. Audits should be both internal and external by persons with expertise in the area being audited.
• There are specific training programmes for each level of management to ensure they understand their responsibilities and can adequately undertake the inspections and assessments as required under the PHMP. Training in geotechnical hazard awareness involves in the field training and a follow up written assessment. Training should be refreshed annually for the workforce and higher level personnel should be reassessed as to the required competency annually.

For a flood hazard management plan (FHMP), key considerations are:
• There is a person directly responsible for management of the mine’s water and flood control system and they are supported by an adequate team of experienced technical personnel and have access to external expertise.
• A detailed description of the mine’s climate and rainfall characteristics is available at the site and a baseline environmental and hydrology assessments have been conducted for the site along with a detailed description and assessment of nearby dams, lakes and rivers contingent to the site.
• The mine’s water catchment areas are identified according to a formal and methodical process and water run-off volumes have been calculated for various rainfall events, including 1 in 100 and 1 in 200 year events.
• Flood models, plans, maps and diagrams are kept current through a formal and regular updating process.
• Flood protection design standards are developed for the site and models and interpretations of flood data and flood protection design standards is reviewed regularly by an independent group.
• There is automated flood water flow measured on and off site and this data is captured and reviewed and captured in flood management plans. Water level monitoring devices are linked to alarms which report to a central control room/area/communications system that is manned at all times during the operation of the mine.
• The mine has developed and implemented a formal flood risk register that addresses flood/water ingress risks across the site. The flood risk register includes the management of lakes, rivers, creeks, tailings disposal areas and site dams.
• The site has a mine flood control design standard for each mining and infrastructure area and this is risk based. A documented flood risk assessment is conducted prior to mining new areas or building new plant.
• Stability evaluations are conducted for flood protection bunds, levees, drains, walls and diversions at the mine.
• Potential flood protection bund and dam failure scenarios have been identified, registered and risk assessed and incorporated in the FHMP.
• Additional water storage voids have been identified for the occurrence of large rainfall events. There are designated parts of the mine that can be sacrificed to allow other areas to be dewatered. This is documented and regularly reviewed. The site also has automated discharge facilities to maximise the discharge opportunities to get water off site whenever possible.

• Contingency plans exist to manage and recover from all potential flood conditions that present a major risk to production and the mine maintains emergency stockpiles on high ground to mitigate production losses during wet weather/floods.
• There is sufficient flood level markers installed at site to give a quantifiable measure of water level rises and these are linked to TARPs.
• Audits and inspections of flood control installations are conducted regularly.
• The site has sufficient pumps to pump out water from one pit/mining area to enable production to restart at 50% capacity within two weeks. The site has some over the highwall pumps to facilitate pumping when pit access is not available. There is a maintenance and service schedule set up in an electronic maintenance programme for the pumps. This includes the electrics such as batteries and lights.
• The site has a dedicated pump/water/flood management crew on site whose major responsibility is to have the pit dewatering systems in a state of readiness at all times.
• High capacity water transfer infrastructure is installed between pits to facilitate quick transfer of water from active mining areas.
• The site has sufficient fuel supplies on site for a one month access outage.
• The site has documented plans and TARPs for removal of large mining equipment from the lower mining areas in a flood event and for shovels, excavators, large electric mining equipment during loss of power to site.
• There a system for regularly cleaning out all drains, levees, culverts and creek crossings.

While these lists are far from exhaustive, they give an indication of the level of control and business continuity planning required to ensure that large loss events are reduced as far as possible. It is this level of commitment to strong risk management processes that define the resilient mining operations.

Source: Hawcroft Consulting International (HCI)
WHEN RISK MANAGEMENT IS NOT ENOUGH.
THE DEVIL’S ADVOCATE...

Resilient companies create their own luck. The systematic design and application of good risk management practices are the pillars upon which a sound company is built. No doubt. But what happens when things go wrong? With the best intentions and commitment in the world unforeseen events occur. A series of seemingly random events occur creating the pre-condition for major loss. It starts to rain and keeps raining more than it has ever done before. The wind blows and blows hard. We lose key pieces of equipment and it now turns out that the waiting time for delivery is twelve months, not three weeks like before. Known to some as the “Monday morning quarterback”, the benefit of hindsight often lays blame squarely at the feet of human error. We dissect and identify the cause of the mistakes. We change and amend, tweak, and re-confirm our commitment to our risk management programme, always seeking to improve and learn from the past. But is it enough? Our stakeholders want their investment secured. They want us to be prudent, careful and to operate safely. To do everything we can, “within reason” to eliminate risk, but they need us to take risk because if we spend all our time and effort in eliminating risk we will not extract resources from the earth.

So while resilient companies make their own luck, paradoxically they too can be unlucky. Insurance takes contributions from many to compensate the few who are unlucky.
CONSTRUCTION AND OPERATIONAL PROPERTY INSURANCE MARKET REVIEW

SOME GOOD NEWS
CONSTRUCTION AND OPERATIONAL PROPERTY INSURANCE MARKET REVIEW

The global construction and property insurance markets continued to be very competitive in 2013, particularly for those projects not exposed to natural catastrophes such as windstorm, floods and earthquake. Current competition is manifesting itself in lower prices, broader coverage and a lowering of deductibles. From insurers’ perspective, they face a perfect storm of high competition, low investment yields and increasing costs associated with greater regulation.

On the positive side, insurers have received relief in the form of lowered costs of reinsurance, the method by which insurers off-load a component of their own risk. The 1st January 2014 “treaty” renewal season saw price reductions of 15%-25%, with greater relief offered to those writing US catastrophe exposed insurance business. Looking even further along the chain, the reinsurance industry itself faces increased competition from capital markets seeking an alternative home for investment. All of these factors combine to the advantage of buyers of insurance in 2014.

In the mining sector, the downturn in demand for output has underpinned this “softness” with insurers competing over fewer construction projects, as projects are cancelled or shelved. In the operational market, loss experience typically drives capacity and 2013 was a relatively benign year apart from Rio Tinto’s Bingham Canyon loss.

Regionally Africa continues to attract activity in construction bringing with it a unique set of risk characteristics including strikes, riot, civil commotion (SRCC), political risks and logistical challenges coupled with significant variation in local insurance experience and regulation. A developed construction insurance market exists in South Africa, which is able to respond on smaller projects and/or those not requiring a significant level of delay in start-up (DSU) or advance loss of profits (ALOP) coverage.

For international insurers, DSU/ALOP remains a key coverage focus, where losses have proven to be complex and difficult to adjust. Coverage is still available, however insurers are requesting more detailed analysis prior to binding risks ensuring greater transparency and certainty for both insurer and insured in the event of a loss.

Flood, contingent business interruption and SRCC have been the hot coverage topics in recent years for operational property insurance. The exclusion or limitation of such coverage will continue to receive scrutiny, particularly in light of the competitive environment.

Current indications continue to be positive for buyers of construction and property insurance in 2014 with significant new entrants to the market, most notably from Asian insurers, now able to offer truly global capacity.

Innovation is playing its part, with developments emanating from key international brokers introducing new placement tools, such as the ground breaking WillPLACE and the development of the Willis G360 placement tool, which have provided additional capacity and better insurer selection based on performance.

“There has been a growing trend in the cancellation of highly publicized mega projects over the last year, with others being delivered late, over budget or delayed. The underlying risk profile of mega projects has not changed, instead there has been a shift from scarce resources to scarce capital.”

Claus Jensen, Advisory Partner, Ernst & Young Australia
WEATHER
THE HIDDEN COST OF BAD WEATHER
NATURAL CATASTROPHES

While the internet immediately brings us desperate images from disaster zones showing the full extent of human suffering, the unseen and indirect consequences of such events are extremely wide. Often isolated, mining operations are even more vulnerable to natural catastrophes and their ramifications. The economic loss can be huge, as years of both private and public investment in infrastructure can be lost. Less obvious consequences may emerge such as pollution, reputational risk, employers’ liability or even a rise in social disorder and violence. The experience in Haiti after the earthquake in 2010 showed that even entire economies can collapse.

A prudent risk manager will seek to determine the extent to which a site is vulnerable to catastrophe by considering the widest variety of both direct and indirect hazards. An understanding of these risks, their likelihood and the consequences for the operation is pivotal in the creation of crisis and contingency planning. With the threats understood, a detailed response plan outlining pre- and post-event procedures can help minimise loss.

Whether natural catastrophes can be predicted accurately or not, understanding and continually monitoring vulnerabilities, formulating mitigation measures and the purchase of appropriate levels of insurance will determine how resilient a mining company will be to a natural disaster.

PADCAL MINING CLAIM

The Padcal copper-gold mine in the Philippines was subject to a serious pollution incident in 2012. During a torrential rain event, 20m tonnes of water and sediment overflowed from the tailings dam into the nearby rivers. The pollution caused significant environmental impacts to the rivers and the surrounding environment. The company was fined approximately P1bn (USD 22.5m) for the spill from the Philippines Pollution Adjudication Board and estimated clean-up costs are P1.06bn (USD 23.8m). The insured was covered under a pollution liability policy with AIG, where the full level of indemnity (USD 25m) is expected to be paid for the business interruption loss (loss of earnings due to site shutdown caused by a pollution incident).

BUT WHAT HAPPENS WHEN THERE IS NO PHYSICAL DAMAGE?

While property insurance policies are traditionally triggered by physical damage, mining companies often face major downtime without such a physical trigger. The construction phase of a project is particularly vulnerable to this. For example, heavy rain may cause no physical damage but may drive the workforce off site. In windstorm exposed areas, such as parts of Australia, when a typhoon warning is issued, not only does the workforce down tools but the company is responsible for evacuating the site. This is standard procedure, whether or not the storm actually hits the site. Such evacuations are not only costly events in themselves but may also threaten the construction schedule, potentially activating delay clauses.

INNOVATION

Going beyond traditional insurance, Willis has designed and placed an innovative derivative-based risk transfer solution to protect Roy Hill Holdings Pty Ltd, an emerging global mining, rail and port venture. Coverage is against the threat of cyclones and heavy rainfall delaying the construction of what will be the largest single-site iron ore mining operation in Australia.

The transaction is backed by Endurance Specialty Holdings Limited. Under the coverage, Roy Hill is protected from the financial impact of a named cyclone passing through a specified geographic area, that which encompasses the company’s 55m tonne per annum mining, rail and port project in the Pilbara region of Western Australia. The unique “cat-in-a-circle” solution, structured and executed by Willis’ Global Weather Risk Practice, provides Roy Hill with event coverage based on the duration that a cyclone spends in the indemnification zone and the amount of cyclone-related rainfall gauged by three Australian Bureau of Meteorology weather stations. The transaction spans two cyclone seasons and responds to these specifically defined cyclone and rainfall events occurring during the period of construction leading up to the mine becoming operational in 2015. The index-based cover differs from regular indemnity cover in that there is no requirement for the insured to prove any loss or damage to assets from the cyclone. The indemnity is based purely upon the performance of the pre-agreed cyclone and rainfall indices.

Barry Fitzgerald, Chief Executive Officer (CEO) of Roy Hill, says “We are pleased that our insurance partners have been able to develop such a highly-tailored product to provide prudent risk management outcomes for the critical development phase of our project.”

Willis leveraged its sophisticated analytical capability to model the probability and impact of cyclones and heavy rainfall in this region of Australia, enabling Willis to structure and execute a solution led by Endurance which responds to Roy Hill’s highly specific requirements.

John Charman, Chairman and CEO of Endurance Specialty Holdings Ltd, adds “Working closely with Willis, we were able to combine our global weather team’s analytic expertise with our long-term capacity and strong balance sheet to execute an innovative structure specific to Roy Hill’s complex and unique risk exposures.”
LIABILITY AND EMPLOYEE BENEFITS

PEOPLE
It is well established that pollution incidents from a mine site can result in significant environmental damages. Beyond environmental liabilities however, the range of exposures is increasing to mine owners and operators. In countries such as China or the Philippines, pollution legal liability insurance is now mandatory for “high risk” operators including mine operators, while mandatory financial assurance in the European Union is spreading across member states such as Romania, where public and private investors are looking at reviving gold mining operations. With environmental liability legislation becoming more stringent, and regulatory enforcement growing, there has never been a more imperative time for the mining industry to reassess their environmental exposures.

**Environmental risks:** Environmental damage claims caused by pollution events are the most significant environmental liabilities faced by mine owners and operators. The impacts of these events to rivers, protected species, drinking water aquifers, wetlands, rainforests and other ecological systems can be significant. Beyond the impacts caused by pollution events, impacts can be caused by normal business operations that physically impair the environment. Whether environmental impacts are caused by a pollution incident or a physical damage event, the result can be catastrophic in nature. Long term remediation and monitoring costs can be extensive especially when compensating the environment for the loss of ecosystems and ecosystem services.

**Third party damage risks:** Certain mining operations can release highly toxic materials impacting air, soil, surface water and groundwater quality. The liability for bodily injury and property damage can be extensive. Consider a nearby industrial facility that suffers loss of earnings because they can no longer extract groundwater for industrial use because of a contaminated aquifer, or a nearby residential area where residents are harmed from the consumption of contaminated groundwater. Class action lawsuits often run into the USD millions for damages and legal defence costs.

**Insured’s first party risks:** According to a survey conducted by the insurer Ace European Group, 90% of their claims are related to own-site clean-up costs. A pollution incident at a mining site can be just as costly to remediate as clean up or environmental remediation occurring off site. Furthermore, the loss of earnings “business interruption” can be significant if an environmental regulator shuts down a site while repair works or clean up works are being undertaken. These costs run into the USD millions, which has been made evident in the Padcal copper-goldmine pollution incident.

**The European Union Environmental Liability Directive:** The European Union Environmental Liability Directive (ELD) 2007 has been implemented into national legislation in all member states. Under the ELD, operators are required not only to remediate environmental damage but to take preventative steps to avoid damage occurring in the first place.

Under the ELD, nine member states require mandatory financial assurance for any company operating with an environmental permit including; Bulgaria, Czech Republic, Greece, Hungary, Portugal, Romania, Slovakia and, to some extent, Spain. Other countries such as Finland, France, The Netherlands, Poland, Sweden and Belgium, require operators of quarries or mines to hold surety bonds for site closures and restoration, as well some financial protection mechanism that should address operators’ failure in case of a pollution event.

“There has been a short-term easing in the skills shortage crisis because of project deferrals and cancellations, but it remains a medium to long-term challenge especially in geology and engineering.”

Louise Rolland, Executive Director, Advisory, Ernst & Young Australia
Outside of the European Union and the ELD, mandatory financial assurance may be required in Argentina, Turkmenistan, Philippines and Kazakhstan for mining operations. Therefore mandatory financial assurance requirements in the EU and around the world can expose mine operators and owners to new compliance and prosecutions risks which can be addressed through insurance.

In addition to compliance risks, the ELD has enhanced the environmental liabilities a mine operator has traditionally faced. Under the ELD operators are subject to:

- **Strict liability where the polluter pays principle is in force**
- **Unlimited liability and fines**
- **Tougher remediation measures including primary, compensatory and complementary remediation**
- **Imprisonment up to two years**
- **Claims instigated by environmental pressure groups and/or private citizens**
- **Claims can be brought against companies, officers and directors**

Tougher remediation measures under the ELD include:

- **Primary remediation** - returning the damaged environment back to its baseline condition
- **Complementary remediation** - measures implemented when it is not possible for primary remediation to return the environment back to the baseline condition, or when this return is too slow. Measures can include creating new habitat
- **Compensatory remediation** - measures to compensate for the interim losses of resources and/or of services that occur from the time the damage occurs until the time the environment returns to its baseline condition

Primary, complementary and compensatory remediation measures go beyond traditional clean up measures operators have experienced before.

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**THE INSURANCE PERSPECTIVE**

The latest legislation in China can expose mine owners and operators to greater compliance and prosecution risks. As of February 2013 pollution liability insurance was made mandatory for mining industries in China. As part of this announcement, China’s Supreme Court issued a judicial explanation which imposes harsher punishments on polluters. In the most serious cases, the death penalty can be handed down. Mine operators must procure environmental insurance if they are to operate in this territory.

Enforcement is beginning to increase in the UK & China and is expected to have a knock on effect across the rest of the world. Any business that has benefitted from not acting upon an environmental breach (i.e. repair/maintenance works) can have their entire income confiscated for that period. The UK Environmental Agency also has 100 new enforcement officers comprising ex-police officers to enforce environmental legislation. In China, the death penalty can be handed down for those operators that do not have a mandatory pollution legal liability insurance policy in place.

The majority of environmental claims are not reported in the public domain unless it is a catastrophic pollution incident. This trend is changing in the UK, with the Environmental Agency displaying prosecution information about polluters on Twitter. Growing social media could create additional financial risks to a mine operator such as loss of consumer and investor confidence.

Traditional insurance products provide limited, if any, cover for pollution.

- **Public liability policies may offer cover for third party claims arising from “sudden and accidental” pollution events but excludes “gradual” pollution, clean up costs at the Insured property and any environmental damage claims**
- **Property insurance generally excludes clean-up costs but may provide limited debris removal cover if the pollution is attributable to an “insured peril” (such as flood or fire)**
- **Standard directors and officers (D&O) insurance policies exclude pollution and certainly don’t provide any cover for costs directly related to a claim (such as clean-up costs), though cover for legal defences may be bought back into some D&O policies**

Such policies are clearly inappropriate for the majority of environmental risks, particularly those associated with own site clean-up, gradual pollution accumulation and historic contamination which is often a key concern for legacy sites and during property transactions.

“Since April 2012 half of the Top 10’s CEO’s have been replaced.”

PwC
There are environmental insurance solutions available to address these complex challenges. Each solution is highly specific and tailored to the address each operator’s exposures. Environmental liability insurance policies can cover the unknown or unanticipated environmental liabilities arising during the insured’s operations and potentially from historic operations. The insurance is site specific and covers liabilities from pollution incidents at or migrating from the insured’s site whether they are sudden and accidental or gradual in nature. The insurance can also cover damage to protected habitats including physical damage caused by the insured’s operations.

Environmental insurance provides protection against legal liabilities brought against mine operators under civil and statutory environmental laws including:

- Statutory clean-up costs – on or off site. For example, clean up action required by an environmental regulator via their statutory powers
- Third party claims for property damage (including nuisance) or bodily injury
- Third party site clean-up
- Environmental damage costs – remediation of the environment required by an environmental regulatory
- Associated legal defence costs and costs of investigation

Enhancements can include cover for pollution exposures from vehicles transporting hazardous materials, first party business interruption i.e. (loss of earnings) due to a pollution incident and crisis management (assistance in dealing with the media).

Large environmental mining claims including the recent Padcal mining incident (see Weather section) has reduced the capacity and appetite for mining risks outside of North America. Many insurers are less willing to insure an on a primary basis but are more positive in insuring on an ‘excess of loss’ basis.

Despite this, there is still appetite in the market for tailor made programmes, developments on greenfields and/or endorsed or guaranteed by high profile investors such as the Worldbank. With the right information such as environmental reports and good risk management strategies in place etc it is possible to obtain environmental insurance protection on a primary basis.

The number of markets underwriting environmental risks has grown over the past 5-10 years which has created a softer market. Premiums have dropped progressively (5%-10% per annum) and there are more available products to accommodate changes in environmental legislation. The market outside of North America is focused in London with a number of the environmental insurers developing a global network using local offices in order to provide country specific policies in the local language.

**MAKING THE MOST OF YOUR PEOPLE**

People are often considered the best asset any firm can have. Without the right people and the right culture throughout the organization even the best capitalised business in the world can fail. The firm will only be as strong as its weakest link, so the saying goes, and with skills shortage at number five of EY’s top 10 risks facing the mining sector, it is no wonder that for some firms the weakest point is their workforce.

Every mining company is fully aware of the challenges of attracting the right staff to the right job in the right country. Too often government imposed quota systems make it a challenge to bring the fully qualified staff in, while training local people takes time and money. Both are hard to find in a difficult market and bring their own risks.
**THE CHALLENGE OF EMERGING ECONOMIES**

In an unstable world, an organisation’s resilience to the manifold risks in emerging or frontier economies is paramount in mitigating future threats to business and ensuring a duty of care to employees. Considering that much of world’s mining sector is situated within fragile states, thereby amplifying challenges to enterprise, a resilient structure that is capable of identifying threats, mitigating risks and responding effectively to crises is critical.

If a state is unable to achieve secure borders, maintain internal security, tax its citizens, provide systems of justice and personal security or meet public expectations, it creates an environment that may nurture unresolved political tensions, and promote conflict. Such states can be a natural haven for crime, kidnap, corruption, extortion and the proliferation of terrorism. When they occur within weak or fragile states, the associated symptoms of terrorism, sanctions, popular uprisings, power shortages, famine and war become significant drivers of threats to business. In such circumstances, the targeting of employees, mining facilities and supply-chains (see previous sections) may become more likely, just as the collateral issues of power supply, efficiency and sovereign risks such as border closures and shifting tariffs become equally more problematic. A strategy that places as much emphasis on the identification of key risks, as it does the key value drivers, and integrates these into the decision making process and enterprise risk management architecture, will help ensure the long-term growth prospects of any mining operation.

How can such risks best be identified, understood and mitigated within the framework of risk management? To gain an insight into risk exposures, knowledge of the regional and local context adds significant value. It seems obvious that an understanding of the business environment is fundamental to resilience and yet many companies only truly understand or focus upon the quantitative aspects of their investment risk. In simple terms, it is argued clients cannot fully understand the business implications of risk unless they understand the social, political and economic context within which they work and the associated security threats. This can be extended into an assumption that complex risk cannot be understood without taking into account stakeholders in and the dynamics of both the power and economic equations and the way in which these shape the threat landscape.

**Terrorism:** The incidence of small scale attacks globally is increasing whilst the risk of terrorist spectaculars against installations or concentrations of people remains. An understanding of the precise time, place and nature of terrorist attacks remains particularly elusive without access to well sourced secret intelligence. However, a more general understanding of the likelihood and manner of attack can be usefully based on an assessment of the capacity of, and opportunities presented to, any group wishing to do harm to a mining organisation or employee. The risks to mining operations are clear; often isolated, dispersed, politically contentious and employing workers from a variety of countries and backgrounds, mining firms offer terrorists a potentially attractive target.

Victim to the proliferation of terrorism across the restive and porous borders of the Sahel region, a French-run Uranium mine in northwestern Niger was targeted by an Al-Qaeda affiliated suicide bomber in May 2013. A suicide bomber dressed in military fatigues gained entry into the Somair site, detonating explosives in his vehicle. The mine announced that one employee had been killed and 14 injured.

Some of the key infrastructure at the site was damaged, delaying the resumption of production with ensuing financial implications.

An understanding of a site’s vulnerabilities, organisation’s risk profile and its political context is essential. This will involve analysis of all past incidents, gaps in governance presented by increasing state fragility; technical advances in weaponry and links to organised crime (including drugs trafficking and/or kidnap). The changing capacity and geo-strategic intent of nations that support terrorism should also be monitored. At the local level, the geography around residential compounds or facilities, the trustworthiness and contentment of staff and guards and cyber-vulnerability are all important factors to be analysed.

**Kidnapping:** For criminal syndicates, political groups and opportunist individuals, kidnapping can be an effective means of supplementing incomes and raising public profiles. Whilst the majority of kidnappers are financially motivated, members of criminal gangs sometimes use kidnapping as a political lever to further their ideological cause. Illustrating the dangers of kidnapping is the high profile case in which an executive of a Toronto based mining firm was held hostage for several months in Colombia. Leftist guerrilla group the ELN (National Liberation Army) kidnapped a gold prospecting team working in the Northern Colombian state of Bolivar in January 2013. While the majority of the victims were released relatively quickly, the executive was held for several months longer and used as leverage in the insurgents’ pursuit for political participation amongst other demands.
To help identify the risk of kidnap, mining firms can draw on data from a breadth of sources to determine the locations, nature and targets of the kidnap or extortion threat. Trends and patterns can then be established allowing mitigation advice to be revised according to country, region or town. Modus operandi are interpreted allowing fore-warning of a reshaped threat to be given. Equally, an understanding of criminal motivations is paramount in risk mitigation and crisis response. Where there exists organised crime, drug-trafficking or local conflict over, for example, land rights or self-determination, these dynamics should be monitored and their impact analysed in order to shape preventative or protective strategies.

**Political violence or civil unrest:** As explored in the section on political unrest earlier, where there is popular dissent that challenges the legitimacy or actions of governments, companies, parties or ethnic groups, political violence or civil unrest may erupt. This violence may deliberately target companies or organisations who do not share the same interests as the perpetrators of violence. For example, a gold mine north of Central Kalimantan province in Indonesia was damaged following a riot by illegal miners in early 2013. Indonesian police tried to remove alluvial miners from the site after they had entered illegally and started panning for gold in the pit. One officer shot an illegal miner and more than 1,000 rallied, looted and burned equipment.

Two water pumps were destroyed, which led to further damage as rain water that filled the pits could not be drained. Staff managed to escape unharmed but the cost of the damaged pumps rose to more than USD 500,000 and the mine was closed for a week. Poor social and community management by the mine appears to have been an underlying factor in the outbreak of violence.

More likely, perhaps, is that employees become caught up in the collateral effects of violence, possibly trapped or unable to access the essentials for survival including medical assistance. Local staff may also be forced to take political positions or be unable to get to work. In such cases, an understanding of politics, religions and the socio-economic drivers of violence (e.g. unemployment and subsidies) is as important as understanding the key political actors and the social fault-lines. The interpretation of the social and political economies, underpinned by historical understanding, is essential and allows the construction of scenarios on which contingency, evacuation, communications, CSR and financial plans can be based.
THE COST OF HUMAN ERROR

Workplace accidents happen. Often. And 91% of these accidents are a result of human error. Human error caused such disasters as the running aground of the Costa Concordia off the coast of Italy, the explosion of the Deep Water Horizon oil platform in the Gulf of Mexico and the Copiapó mining accident, which kept 33 Chilean miners underground and in the headlines, for 69 days.

Workplace accidents of all types know no boundaries. Consider just a few statistics from the mining industry:

- Mining death rate from work related accidents: 42.9/100,000 versus police and firefighters: 0.3/100,000
- 90% of mining industry fatalities in the last decade have involved contract workers
- 2.9 average lost-time per 100 employees in US mining
- 80% of fatalities involved a worker with five years less experience at the site

Despite the significant advances in safety management systems over the years, the challenge on a daily basis is to know what's going on in the minds of employees in terms of what compromises their ability to remain compliant to standard operational procedures. Continuously assessing an employee population across key situational awareness factors can highlight which situational awareness factors are driving organisational, departmental, working group and/or individual behavioral threats.

Since surveying is continuous there is a seamless flow through of identification, quantification, control and mitigation, ensuring a continuous improvement process.

From employee responses, employers can identify what psychological and social processes are driving employee error or non-compliance. Once layered on top of this demographic information with diagnostic precision, it is possible to determine who is at risk, why they are at risk and when accidents and incident are likely to occur in the future. Once armed with this information, firms can target the specific drivers for behavioural risk through mitigations or corrective actions well before events happen.

In one example, a company had not seen its accident, incident and loss control rates change in more than two years and, while their safety management systems were best in class, they simply could not move the needles any further. By understanding the level of employee decision making in a way they had historically never been able to do, they were able to dramatically cut the losses.

<table>
<thead>
<tr>
<th>INCIDENT</th>
<th>IMPROVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Tissue Injury</td>
<td>17% reduction</td>
</tr>
<tr>
<td>Flying Devris Injury</td>
<td>31% reduction</td>
</tr>
<tr>
<td>Burns</td>
<td>18% reduction</td>
</tr>
<tr>
<td>Strains/Sprains</td>
<td>14% reduction</td>
</tr>
<tr>
<td>Fractures</td>
<td>51% reduction</td>
</tr>
<tr>
<td>Fractures</td>
<td>51% reduction</td>
</tr>
<tr>
<td>MVAs</td>
<td>16% reduction</td>
</tr>
<tr>
<td>Audit Compliance (LOSA)</td>
<td>21% improvement</td>
</tr>
<tr>
<td>Direct Damage Costs</td>
<td>30% reduction</td>
</tr>
</tbody>
</table>

Source: Presage
NATIONAL (DOMESTIC) BENEFITS
With each local country arrangement differing (sometimes significantly) from the benefits available, to what funding methods are applicable, benefits can be difficult to manage at a centralised level and are best dealt with by local experts who understand the details. Centralised oversight is essential to achieving a consistent approach, balanced against the needs and challenges of the domestic market. In these instances global benefits management can be pivotal and is a service offered by the larger global employee benefits brokers/consultants.

<table>
<thead>
<tr>
<th>BENEFIT</th>
<th>UK</th>
<th>AUSTRALIA</th>
<th>RUSSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Medical Insurance</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Group Life/Death in Service</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Income Protection (Short term sickness/Long term disability)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Key person</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellness/absence management</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
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</table>

INTERNATIONAL (EXPATRIATE) BENEFITS
International benefits come with a myriad of additional problems, including compliance and taxation implications. Given the complexity of short term, long term and global hires, it becomes clear how policy control mechanisms become essential.

International benefits consist primarily of international private medical insurance (IPMI), international group risk and key person cover, but such risk is not dealt with on a stand-alone basis. There are crossovers in cover with travel and security policies which can, if used improperly, leave the organisations exposed to gaps in cover, or where duplication exists, a confusion in process arises.

As many of these benefits are owned by different functions in the business, it is essential that appropriate stakeholders be involved in the purchase of international benefits. Lack of cover or use of the wrong policy in key areas such as Africa, where medical evacuations are common can lead to significant business expenses.

CASE STUDY
RISK POLICIES

Risk policies:
Company X provides its employees with an International Medical Insurance in addition to providing a separate evacuation policy.

Situation:
An employee is taken ill and the on-site physician recommends that they be evacuated for treatment and calls their evacuation provider who carries out the instruction. Following this they receive an invoice for GBP 100,000 for the full cost of the evacuation.

Solution:
If they had used their medical policy, which also includes evacuation for medical emergencies, the coordination of the evacuation would have been undertaken by the medical insurer. The claim is paid out of the claims fund and the business is protected from incurring any additional cost.
OTHER CONSIDERATIONS:

MULTINATIONAL POOLING
Many businesses with a global footprint often consider the merits of multinational pooling. Premiums and claims are pooled globally with dividends payable when claims experience is positive.

CAPTIVES
An employer can also consider the use of a captive insurer when underwriting global employee benefit risks.

WELLNESS/ABSENCE MANAGEMENT
In addition to pure risk cover, supporting policies can be essential to long term premium sustainability. IPMI particularly can be effectively supported through a well-structured wellness proposition, including assignment pre-screening/health checks, pre-trip planning and employee assistance programmes (EAP). In some cases such programmes have reduced the following year’s claims fund by more than 30%. Whilst the rewards are not fully realised immediately, the long term gain for the organisation is significant and more than covers the investment cost. If employees are sent on assignment with their dependants it’s important to arrange for them to participate too, they generally account for more than 60% of total claims spend.

Equally absence management policies work in conjunction with medical and risk benefits to combat the impact on cost and productivity of long term absences.

MANAGING EMPLOYEE BENEFIT RISKS
Employers look to benefit advisers to help achieve specific business goals. While sometimes perceived as expensive the achievement of defined goals and the value added to the business far outweigh the initial investment. A successful benefits package will help a business engage with their whole workforce and encourage staff to value the benefits offered. This in itself leads to retention of key staff and attracts new talent to any organisation.

Many organisations which have invested time and money in a comprehensive range of benefits to attract and retain the right employees, have also recognised that good communication is essential to ensure the best return on investment. All too often employees are not aware of the full range of benefits and services available to them and do not appreciate the overall value of their package. In addition, personal circumstances, interests and aspirations vary between employees. Increasingly, employers are offering more flexible benefits to take into account the diverse needs in the workplace, and increase the appeal of its employee benefits.

Employers and their advisers need to remain resilient to the ever changing legislation and regulation the industry and insurers within it encounter. On-going market developments mean that regular review meetings and benchmarking of benefits is important to maintain competitive positioning as well as ensuring a business remains compliant.

Example 1: Impact of wellness (introduced year 3) on IPMI claims & premium

Ensure that benefit strategies are confirmed in advance of policy placement and that appropriate mechanisms are in place to track delivery and measure success.
## Annex

### M&A Deals Listed in Order of Deal Value

<table>
<thead>
<tr>
<th>Announced</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/06/2013</td>
<td>Eurasian Natural Resources Corporation Plc (46.1% Stake)</td>
</tr>
<tr>
<td>22/02/2013</td>
<td>Polyus Gold International Ltd (37.75% Stake)</td>
</tr>
<tr>
<td>07/02/2013</td>
<td>Kazzinc Ltd. (29.8% Stake)</td>
</tr>
<tr>
<td>14/05/2013</td>
<td>The Sibuglemet Holding</td>
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<tr>
<td>14/01/2013</td>
<td>Uranium One Inc (48.6% Stake)</td>
</tr>
<tr>
<td>04/03/2013</td>
<td>UK Kuzbassrazrezugol OAO (28.98% Stake)</td>
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<tr>
<td>02/01/2013</td>
<td>ArcelorMittal Mines Canada Inc. (Iron ore mining and Infrastructure assets) (15% Stake)</td>
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<tr>
<td>28/07/2013</td>
<td>Northparkes Mines (80% Stake)</td>
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<td>21/01/2013</td>
<td>UK Kuzbassrazrezugol OAO (20% Stake)</td>
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<td>01/03/2013</td>
<td>Tazhong Mining Co. Ltd</td>
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<td>28/06/2013</td>
<td>Canyon Fuel Company, LLC</td>
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<td>01/08/2013</td>
<td>Voskhod Mining Plant and Tikhvin Ferroalloy Plant</td>
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<td>21/01/2013</td>
<td>Freeport Cobalt and FCX</td>
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<tr>
<td>21/05/2013</td>
<td>Discovery Metals Limited (86.28% Stake)</td>
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<tr>
<td>01/10/2013</td>
<td>International Minerals Corporation (96.8% Stake)</td>
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<td>02/04/2013</td>
<td>CJSC Bazovye Metally</td>
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<td>27/09/2013</td>
<td>Archipelago Resources Plc (47.37% Stake)</td>
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<tr>
<td>12/06/2013</td>
<td>Rio Tinto Eagle Mine, LLC</td>
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<td>13/02/2013</td>
<td>Altyntalmas Gold Ltd. (50% Stake)</td>
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<td>11/07/2013</td>
<td>Bumi Plc (23.8% Stake)</td>
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<tr>
<td>HQ</td>
<td>Acquirer</td>
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<tr>
<td>Kazakhstan</td>
<td>Eurasian Resources Group B.V.</td>
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<td>Gavril Yushvaev (private investor); Zelimkhan Mutsoev (private investor)</td>
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<tr>
<td>Coal</td>
<td>Akhmed Palankoyev (private investor)</td>
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<td>ARMZ Uranium Holding Co</td>
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<td>Canada</td>
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*Source: Mergermarket, 23 October 2013*