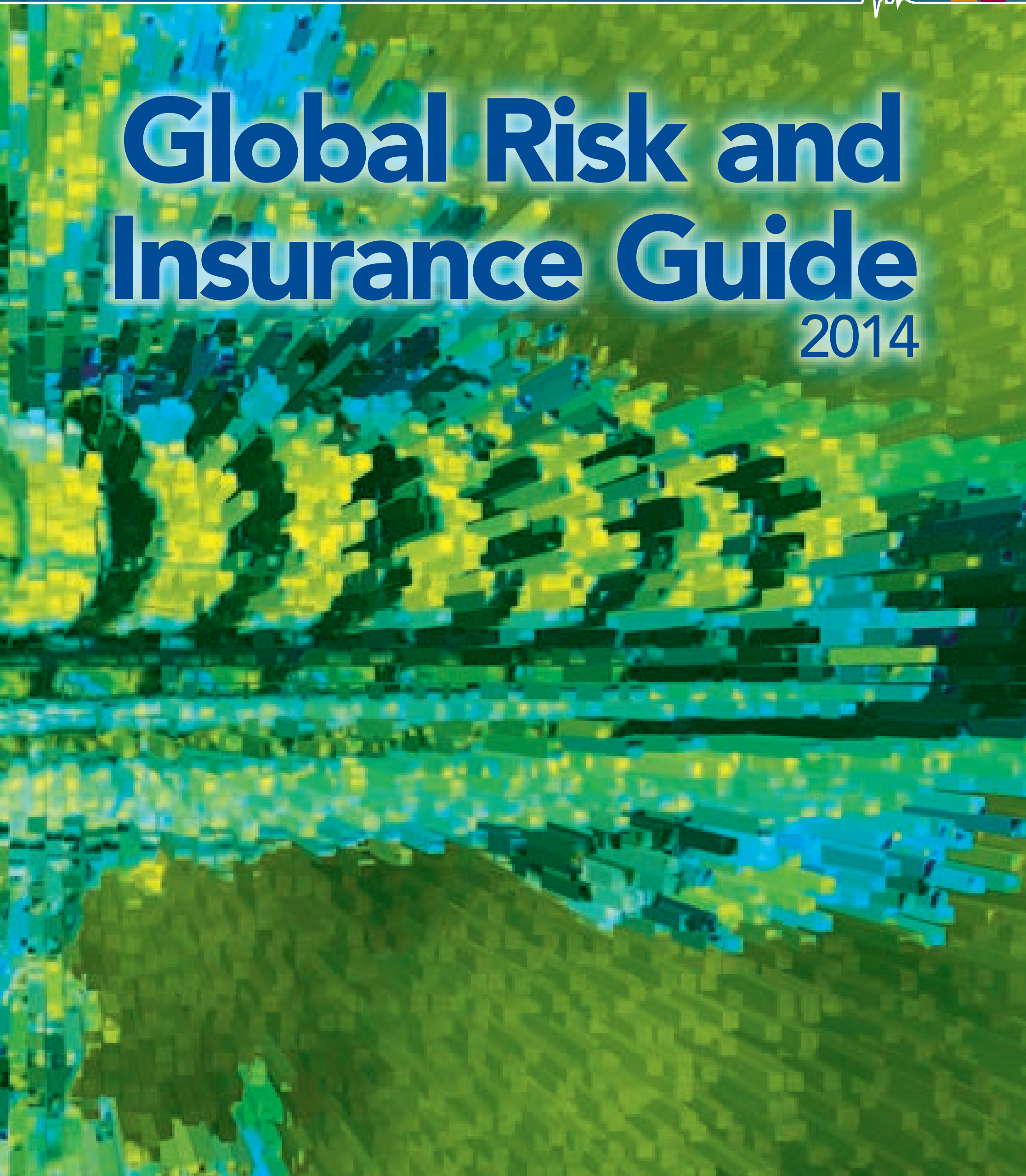
Part of the **Leaders** series published with *Mining Journal*

Mining Journal

Global Risk and Insurance Guide 2014



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Published and distributed by:
Aspermont Media, 4th Floor, 120 Old Broad Street
London, EC2N 1AR, United Kingdom
Tel: +44 (0)20 7216 6060 • Fax: + 44 (0)20 7216 6050

ISBN: 978-0-9546893-8-4

Account manager: Owen Raw-Rees
Designed and typeset by: Tim Peters
Cover design: Tim Peters
Printed and bound by: Stephens & George, Merthyr Tydfil, UK

Aspermont Media
Information for Industry

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*Standard & Poor's – How Major Companies Select and Evaluate Insurance Brokers, latest survey November 2011

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Legal considerations

The attitude to insurance of organisations in mining and other commercial sectors has changed in the last decade. The development of knowhow and increased awareness of risk management and corporate governance has seen a shift in insurance buying, and insurance is perceived to be an essential tool for improved corporate governance and business continuity. In this article, we will consider the shift in attitude and highlight what considerations are necessary to ensure contract and coverage certainty. We will also suggest some ideas to ensure effective claims handling processes that could help minimise disputes between policyholders and insurers, and to identify coverage issues early to avoid protracted and distressed claims.

Trends in the mining sector

There has been an unprecedented level of losses in the mining sector in recent times. These losses were caused by a series of severe weather events and natural catastrophes such as floods, earthquakes and cyclones as well as operational incidents, including major equipment break-downs. The effects on the mining sector and associated industries, including suppliers and customers has been significant and complex. As key production and supply chain points were affected, interruptions were often lengthy and significant. In some cases, reduced output has been argued to have caused price spikes in the global cost of commodities. This gave rise to coverage issues regarding the calculation of business interruption claims and other issues. The losses also gave rise to increased claims and protracted coverage disputes.

• **Insurance complexity:** The unprecedented losses have increased awareness at a corporate level of the importance of insurance and the need to get the cover right. This is particularly true for business interruption insurance. However, the complicated way in which mining houses get their product from mine to market makes such claims, when they happen, extremely complicated. This in turn makes the claim investigation process complex and time consuming. This has led to mining houses seeking to simplify the basis on which the indemnification of such losses is calculated, so as to reduce the frictional cost of claims that is the time and resources required to deal with such an investigation, and to carry out increased due diligence on service providers and suppliers.

• **Rising costs of insurance:** Commodity prices have increased considerably as a result of the huge demand from China and India for raw materials. Despite the economic downturn and consequential reduction in demand for materials, commodity prices still remain historically high. This has increased the financial exposure of mining companies if their business is interrupted, and contributed to the rising cost of business interruption claims and insurance in the mining sector. The increased levels and size of insurance claims has negatively impacted traditional insurers' appetite for risk in the sector. This has resulted in the reduction of available capacity and, in turn, increased premiums, more onerous conditions and broader exclusions.

- **Increased use of captives:** Captives are typically formed to provide insurance to a parent company, though they can offer insurance to third parties such as joint-venture partners and, on major projects, contractors, suppliers and service providers. In the past, insureds have typically turned to captives in response to a hardening market when there is a shortage of insurance capacity and increasing costs. However, captive insurers can have important risk management benefits and are increasingly seen as a risk management tool. They are proving increasingly attractive to larger organisations who have grown significantly and due to their wider geographical spread invariably become more complex corporate structures.

Traditionally, captives have been located offshore. Bermuda, Cayman Islands, Isle of Man and Guernsey have historically been the most popular, as have Singapore and Labuan more recently in the Asia Pacific regions. In recent years the trend has been towards onshore domiciles in the USA, Europe and Australia as jurisdictions pass specific captive legislation.

Tax benefits are often no longer the key driver to establishing a captive, partly because the traditional tax benefits of offshore captives have been eroded by controlled foreign corporation legislation. Captives still offer tax benefits through the treatment given to an insurer's loss reserves for incurred but not reported claims, but the use of captives has matured. Their use has evolved steadily to reflect changing risk management practices, insurance regulation, the vagaries of the insurance market and international tax legislation. Captives remain a prudent safeguard against violent shifts in insurance pricing and most companies now view them as having a broader use and benefit, providing increased risk management, controls and optimising insurance purchasing whilst making costs savings.

Other trends resulting from the increased use of captives are rising levels of self insurance, and the development by organisations of insurance products specifically tailored to their business needs which are not available in the market. For example, companies can use captives to provide business interruption insurance that insurers are no longer willing to provide at adequate limits and on acceptable terms. This ability to be flexible enables them to approach complex risks and situations in new and different ways.

As organisations have grown larger and more globalised, captives can also be useful tools for centralising and pricing risk management and underpinning international insurance programmes. As part of a global programme, captives can help to provide consistency of cover, in particular between local subsidiaries and the corporate centre.

Claims protocols can also be put in place within a captive to better suit the characteristics and shape of the organisation, reduce insurance coverage disputes and protracted or distressed claims.

Contract certainty and quality

With the increased focus on insurance in the corporate governance arena and its growing risk management influence on business continuity and balance sheet protection, organisations need to focus on contract certainty, contract quality and efficient claims handling.

The English Court of Appeal judge, Longmore LJ, said in WASA v Lexington [2008] that:

"Some contracts are actually incapable of being understood at any point in time because they are so badly drawn, but ... the court's endeavour is always to make some sense out of nonsense ... As opposed to a corporate or property transaction, the approach has been one of deal now, detail later."

It was previously not uncommon for insurers to sign policies and for the exact terms of cover (including the policy wording) to be agreed at a later date. The lack of evidence and inconsistency or ambiguity of terms and conditions gave rise to many disputes between brokers, policyholders, insurers and reinsurers regarding the scope of cover. One example was the World Trade Centre dispute in the aftermath of 9/11. In that case, the owners of the World Trade Centre and its insurers disagreed on the terms of cover. Final policies had not been issued at the date of loss, the definition of "Occurrence" was not defined in most of the contracts or binders and there was competing "Occurrence" language.

In December 2004, John Tiner, then chief executive of the Financial Services Authority (FSA), challenged the London insurance market and the "deal now, detail later" approach it had to insurance. There were increasingly more complex risks being placed through the London market and, with increasing competition from other jurisdictions, clarity was needed in relation to policy wordings and the placing and claims processes. John Tiner deemed that the market needed to modernise and set the challenge of achieving contract certainty within two years, and if it failed the FSA would impose its own regulatory regime. The market responded by creating the Market Reform Group (MRG) which led the charge for change. The MRG had four aims:

1. **Contract certainty:** achieving clarity in insurance contracts so both the insured and insurers are aware of all the terms from the outset. It was hoped this would reduce coverage disputes, legal bills and improve downstream processing.
2. **Process efficiency:** establishing efficient processes to store data that could be accessed by the market. The intention was also to reduce error rates.
3. **Service to clients:** adopting processes that led to insurance contracts being agreed quicker, and the faster issuing of contractual documentation, processing and agreement of claims.
4. **Global standards:** achieving accepted international standards for accounting, business processes and technology.

A target was set for the end of 2006 for the London market to achieve contract certainty in at least 85% of cases. This was attained and surpassed by implementing the following three main areas of change:

- A consolidated Contract Certainty Code of Practice was published in June 2007 for the entire UK insurance industry, including subscription/non-subscription markets, commercial and retail risks. It was a code of best practice to apply across all offices and branches.
- The London Market Principles (LMP) slip was introduced to ensure a common format and content for insurance policies, which would influence how business was conducted and transacted. The LMP slip was followed by the Market Reform slip in an attempt to further increase the efficiency of the placement process. In June 2007, this was replaced with the Market Reform Contract (MRC), the use of which was mandatory for the London market from 1 November 2007. It was intended the MRC would be the precedent standard for a contract of insurance between an insured and insurer.
- The Insurer's Market Repository was developed during 2006 to speed up the accounting and claims processes to allow insurers to view all the documentation submitted by brokers in a secure central database that enabled premiums and claims to be processed.

As a result, there has been a significant transition in the London market towards contract certainty. The situation is much improved. Parties know the terms upon which they are contracting by the time the risk is placed, so the potential for disputes is reduced. There have also been significant advancements in increasing the knowledge and experience of the person entrusted to buy insurance, often the risk manager, who in larger organisations needs to have considerable experience in risk management and insurance programmes. This improvement is at least on a quantative basis, namely that, as at the date of inception of a policy, it is now most likely that there will be an issued policy. However, on a quantitative level, the policy that is in place may leave a lot to be desired. Many mining policies are historical in nature and, accordingly, often "grandfather in" drafting errors and uncertainties. These can still be a source of dispute in a major claim.

So these contract certainty changes do not necessarily mean the terms are clear and unambiguous. We still see problems arising from poorly worded policies, conflicting provisions caused by "cut and paste" exercises, and there is still a lot of case law emerging to determine the scope of cover and what specific terms and conditions mean.

The push for contract certainty is being driven by corporate governance issues and the identification of procurement risk in the insurance contracting process. This governs not just the contracts utilised for risk transfer, but also the contracts used for service providers such as insurance brokers and loss adjusters. As a result, more needs to be done to clarify the terms of these contracts and avoid disputes arising. Insurance contracts are usually only tested once large and difficult claims arise, when parties will exploit any ambiguities or discrepancies they can. As a result, a rising trend has been increased legal input, by the insured and insurer, at both the claims stage and, increasingly, the product/insurance wording development stage to ensure the insurance wordings do what they are intended to do.

Contract certainty is not simply focussed on the quality of the core or master policy wording. Mining houses often operate in multiple jurisdictions, some requiring local/fronting policies with penalties (both financial and commercial) for failing to meet the local regulatory insurance requirements. Also, of paramount importance is the contractual risk transfer from local/fronting policies to global programme captive insurers and reinsurers. Consequently, when reviewing a policy to develop a better product, there are certain clauses that should be given particular attention.

> "The push for contract certainty is being driven by corporate governance issues and the identification of procurement risk in the insurance contracting process"

The following is a list of the clauses that are regularly involved in coverage disputes:

1. **Jurisdiction:** It is important to ensure a jurisdiction is selected where there is sufficient legal precedent and expertise at a judicial level to ensure disputes will be decided or resolved in a manner that is relevant and consistent so as to limit the chances of inappropriate or unpredictable decisions being made.

2. **Proper Law:** The chosen law will govern and construe the terms and conditions of the policies. For jurisdictions where local/fronting policies are required, a policyholder may not have a choice of law. In our experience, outside of North America, Europe and Australia there are few jurisdictions where insurance law is developed to the extent that there is extensive and settled legal precedent to guide both policyholders and insurers on the terms and conditions of an insurance policy. We are increasingly being instructed to advise on coverage disputes from an English law perspective notwithstanding the fact that the governing law of the insurance is a different law. This is because English law is one of the most developed for insurance law and so emerging jurisdictions will often be guided by the English law approach and interpretation. Also, often the key to a claim being indemnified is for the reinsurance policies to be successfully triggered thereby allowing funds to flow down to the insurers or captive and on to the policyholder. Often that reinsurance will be placed into the London insurance market and governed by English law, although the local policy may be subject to a different governing law.

3. **Misrepresentation/non disclosure:** There have been extensive discussions over the past few years to lessen the draconian nature of non disclosure. Under English law, the best position for a policyholder is to eliminate by a contractual provision

the remedy of avoidance in the case of an innocent or negligent non disclosure or misrepresentation. This may not be attractive from an insurer's perspective. Also, as the terms inserted into the insurance wording will often be the result of extensive negotiation with the insurance market, it is important to understand the effect of the governing law on such issues as misrepresentation/non disclosure.

4. **Notice requirements/knowledge holders:** There is a significant amount of English case law considering and deciding issues that have arisen from notification provisions. Under English law it is often the case that the notification provisions are drafted as condition precedents where the effect of breaching such terms permits insurers to deny paying the claim. Notification clauses often contain temporal limits within which notifications are required to be made, some may even be more prescriptive as to what a notification should contain and how it should be made. Issues that arise from notification provisions include: when is a policyholder required to notify (what level of awareness is required before the notification conditions trigger an obligation on the policyholder to notify)? Who has to have the relevant awareness before the clock starts ticking on the notification (it is often appropriate to specify the risk manager or person empowered to make the notifications, otherwise it could be considered that the knowledge of an employee, sometimes in a different jurisdiction, is sufficient to start the clock running)?

> "English law is one of the most developed for insurance law and so emerging jurisdictions will often be guided by the English law approach and interpretation"

5. **Warranties:** Under English law a breach of warranty entitles an insurer to void the policy from the date of breach. Other jurisdictions may take a different approach and it is important to know how relevant jurisdictions deal with warranties and breach of warranties. Of equal importance is to identify all warranties within a policy to ensure the policyholder is in a position to provide the warranty required. If warranties are not recognised in other jurisdictions, it may be possible to draft a clause which will have the same effect, especially if the precise consequence of a breach is spelled out.

6. **Subrogation:** This is often a commercially sensitive issue. Whilst it is normally the case, certainly under English law, that waivers of subrogation are usually provided to all insureds and co-insureds under policies, broader waivers of subrogation to ensure commercial relationships are not put at risk following the indemnification of a claim and subsequent subrogation action is usually the subject of negotiation between insurers and policyholders and can often lead to an increase in premiums.

7. **Conditions precedent:** Such terms under English law provide insurers with the draconian remedy of allowing insurers to deny paying a claim even if the breach was not causative of the loss. It is important to identify all such clauses and to understand how different laws treat such terms.

8. **Absolute exclusions/resultant damage:** Insurance wordings contain exclusions. There are often, particularly in property damage and business interruption policies, exclusions that are not absolute but which write back certain covers. Examples include: defective design, workmanship and material exclusions, which often exclude the part/portion which is defective in design etc, but provide cover for the remaining property damaged. Inherent defect exclusions can also provide resultant damage cover. It is important to identify the exclusions that are more likely to be relevant to any claim from a policyholder's perspective to make sure it understands and accepts the restrictions on cover.

9. **Limitation of actions/time bar:** Limitation periods can differ from jurisdiction to jurisdiction as to when time starts to run and the actual period before a claim is time barred. Different insurance products (for example property policies as compared to liability policies) also differ as to when time starts to run for limitation purposes. Some insurance policies may contain clauses reducing limitation periods from the regulatory norm of a particular jurisdiction, but whether these will be effective may depend on local laws.

10. **Policy trigger:** To trigger a policy certain criteria will need to be met. The policy trigger criteria will indicate which policy is on risk. This should be checked to ensure the trigger is relevant to the insured's business.

11. **Back to back cover:** Whether the insurance and reinsurance policies for facultative risks are truly back to back depends on the wording, and whether the same law and/or jurisdiction applies. If the law is different, the insurer could be exposed if the scope of cover is wider under the insurance policy than the reinsurance.

12. **Attachment language:** This concerns incorporating newly constructed property assets onto a policy, and the language will be particularly important if different property is becoming operational at different times, for example during a construction project. The focus will be on the attachment criteria that needs to be met for property to transfer from say the construction all risks policy to the operational policy/programme. Transfers can take place automatically, but larger plant and assets will often not transfer automatically so insurers, policyholders and insurance brokers all have to be agreed on the attachment language to ensure the property transfers successfully and that no disputes arise or assets become uninsured due to differences in understanding between the parties.

13. **DIC/DIL:** Complex global programmes may incorporate policies to plug gaps in policies, for example where there are differences in conditions leaving the possibility of uninsured assets or difference in limits in cover. However, before knowing whether such terms are required, a deeper understanding of the interaction of the policies is important.

14. **Interface between local/fronting policies, global programmes and reinsurances:** The differences between the covers or different legal constructions of terms can lead to discrepancies in coverage. To provide seamless cover can often take a considerable amount of time with all parties: insurers, insurance brokers and policyholders working together, all of whom have to have a detailed understanding of the insurance programme and what it is that the policyholder is needing coverage for.

To achieve contract certainty it is important that good communication takes place between the policyholder, broker, insurer, and reinsurer to ensure each is aware of the terms agreed and how the policies are intended to work and fit together. The starting point is an understanding of what the policyholder wants or needs to achieve. This can incorporate simple practical issues (ie to safeguard property; the locations of those assets) and regulatory issues (what duties and obligations are required to be complied with from a regulatory perspective in the relevant jurisdictions); commercial issues (what is the risk appetite of the policyholder? This will influence the level of self insurance and the way in which that is structured); accounting and tax issues (are there any mechanisms that can be used to legally minimise the level of tax on the policyholder?); control, understanding and agreement of the claims process (how does the policyholder want this to work? Is the insurer in agreement? Perhaps a detailed claims protocol is required and set out in the insurance policy for the efficient handling of claims and to ensure all the interested parties are aware of the process).

The increased size of organisations and international expansion has increased the need for complex policy wordings and insurance solutions on, where possible, a global scale. We have noticed a significant increase in instructions to advise on policy wordings in order to help increase the level of contract certainty. This stems from the increasing legal influence and need for legal advice required in the insurance procurement process.

Claims handling

As discussed above, wordings are usually not tested until claims are made. As part of the risk management process, it would be beneficial to have in place an agreed, robust, mining industry claims protocol to project manage the claims handling process effectively.

Such protocols would identify who acts for who, the role of and appointment of loss adjusters, how the engagement and cooperation between parties will take place and include a plan for the efficient flow of information/documentation and reporting.

This could help manage and progress the myriad of issues and uncertainties that can arise when handling large, complex claims in often unpredictable foreign jurisdictions. We set out below some examples and suggestions for how a claims handling protocol could assist.

Requests for and provision of information

The regular flow of information between the parties and an open exchange of concerns regarding a claim is key to maintaining trust and facilitating an effective and efficient resolution of a claim.

This is a two-way process as neither side will want to feel it is providing potential "ammunition" to the other side without receiving something in return. It is therefore in all parties' interests to set up a protocol for the exchange of information. This could include the appointment of a single loss adjuster who would identify the issues and manage the process. The insured could be required to respond to document requests within a set period of time, say 30 days, in return for which the insurer will identify any coverage issues within a set time following the loss adjuster's report. The terms of such a protocol should be agreed at the underwriting stage as they will be more difficult to agree in a post loss environment.

Issues arising in different jurisdictions

It is important to be aware of and have regard to local laws when handling claims to avoid waiving rights to raise potential issues at a later stage. Following are some examples of particular peculiarities parties can experience when handling a loss in foreign jurisdictions:

- **Chile:** Under Chilean Decree No. 863, of 1989, the loss adjuster's report (which may contain conclusions regarding coverage and quantum of the loss) may be objected to by any of the parties to the insurance or reinsurance contract within a 10-day period. The adjuster shall respond to the objection within five days. If objections are made, the controversy shall be resolved in accordance with the conflict resolution provision in the policy. Undisputed amounts must be paid by the insurer to the insured. Whilst the consequences of not objecting to the adjustment report within the prescribed period are not clear, it could be that the party implicitly accepts the findings of the adjustment report so the "undisputed" amounts become payable. While a failure to comply may not deprive the parties of their rights in court proceedings, it is important to be aware of this provision in Chilean law and what impact it could have.

- **Argentina:** In Argentina, an insurer must decide on the right of the insured to be indemnified within 30 days from receiving notice of the loss. If the insurer does not reject the claim in a timely manner, it will be deemed to have accepted the loss and be required to pay the claim, unless it asks for additional information. If so, the 30-day period will be postponed until (i) the insurer has received information to reject the claim or (ii) the insured has provided all the information requested by the insurer. However, the start of the 30-day period will only be postponed if the information the insurer requests is relevant to its decision. All relevant questions must be put to the insured at the same time. After the insurer has received answers to the questions put, the insurer may realise that further information is required. The new questions must have arisen as a consequence of the information the insurer obtained. Once the relevant information has been received, the insurer must report to the insured its decision on coverage within 30 days, otherwise it will be deemed to have accepted the loss.

- **England & Wales, Canada and other Common Law Jurisdictions (not Australia):** In jurisdictions where an insurer can avoid the policy for material non-disclosure or misrepresentation, the insurer must not take steps which may affirm the contract with the insured, as its rights to avoid may then be waived. The insurer will have affirmed the contract if it acts in a manner consistent with the policy remaining in force, even if it is refusing to pay the claim on the grounds of non disclosure/misrepresentation. Examples of action (or inaction) by an insurer which have been held by the English courts to affirm the contract include:
    - i) A failure to act after the discovery of a potential non-disclosure;
    - ii) Cancellation of the policy pursuant to cancellation provisions after discovery of a non-disclosure;
    - iii) Acceptance of premium;
    - iv) Investigating and paying claims under the policy;
    - v) Relying on rights under the policy (such as the inspection of documents).

This is a difficult area for insurers. Once they have the required level of knowledge of the potential non disclosure or misrepresentation they must be careful not to affirm the contract if they want to avoid. Therefore, if a claims protocol is in place and issues arise that may give insurers grounds to avoid, they will need to act quickly and decide at an early stage whether they wish to pursue avoidance of the contract or not.

Interest

An issue which is often overlooked, or at least treated as an afterthought, when handling large complex claims is the interest which can accrue on claims. Under English law, there is no statutory regime which requires interest to be paid if a claim is paid late. If matters proceed to litigation or arbitration, there are statutes which govern the award of interest - s35A of the Senior Courts Act 1981 and s49 of the Arbitration Act 1996. However, judges and arbitrators have wide discretion under these rules and interest awards are usually calculated by reference to base rates.

Under English law, insureds are not typically entitled to damages arising out of the late payment of claims unless interest can be said to have been triggered by a breach of contract, for example the failure of an insurer to make a payment on account. This issue is currently being considered by the Law Commission in its review of Insurance Contract Law so the position may change. The situation, however, is significantly different in other jurisdictions, and the following are examples of countries that often surprise insurers.

- **Australia:** Under Australian law, interest on insurance claims is governed by s57 of the Insurance Contracts Act 1984, which provides that:

> *(2) The period in respect of which interest is payable is the period commencing on the day as from which it was unreasonable for the insurer to have withheld payment of the amount and ending on whichever is the earlier of the following days:*
>
> *(a) The day on which the payment is made;*
>
> *(b) The day on which the payment is sent by post to the person to whom it is payable.*
>
> *(3) The rate at which interest is payable in respect of a day included in the period referred to in subsection (2) is the rate applicable in respect of that day that is prescribed by, or worked out in a manner prescribed by, the regulations.*

The Supreme Court of Victoria has held that the date for commencement of the interest period is a question of fact. The court referred to the "essential nature" of the claim, which it said was established when the insured first submitted the majority of its claim (on which it was eventually successful) to the insurer, via its loss adjuster. The insurer was given the benefit of a short period in which to make further investigations, after which, interest began to accrue. The fact that there was a bona fide dispute on coverage between the parties was not relevant to the fact that the insured had essentially established its claim when the loss adjuster submitted its initial findings.

This follows the general trend in the Australian courts of interpreting s57 in favour of the insured. On this basis, insurers should consider regularly if and when it is appropriate to make payments on account to reduce the potential liability for interest.

- **Brazil:** In Brazil, interest on insurance claims starts to run from the date of loss (although there are some conflicting authorities on this issue). The rate of interest is governed by Article 406 of the Brazilian Civil Code, which provides that interest will be fixed according to the rate which is in effect for late payments of taxes to the National Treasury, unless a rate has been agreed, or when it arises due to some other legal provision. Article 161 of the National Tax Code determines that, unless a legal provision provides otherwise, 1% interest rate a month applies (ie 12%/y).

It is also worth mentioning that in Brazilian disputes the costs award will be based on the size of the award against the losing party. Article 20 of the Brazilian Civil Procedure Code determines that the losing party is liable to pay the expenses of the winning party and the court usually fixes fees at between 10% and 20% of the amount of the award. Further, awards given by Brazilian courts are subject to "monetary correction" which is an attempt to account for inflation in the lifetime of claims. So, for a claim of US$100 million an insurer could be facing interest of US$12 million per year plus a costs award of up to US$20 million if the matter was to go to trial.

"The RIMS Mining Forum initiative is a forum set up to consider the lessons learnt from the major business interruption losses of the last five years"

- **Norway:** Norway is a further example of a jurisdiction in which interest can start to accrue quickly. Section 8-4 of the Norwegian Insurance Contracts Act provides that, "The Assured is entitled to interest on outstanding claims owed when two months have passed since notification of the insurance event was sent to the Insurer". The rate is currently 8.5%/y. There are many other examples we could cite, but the overriding message in relation to interest is that in many jurisdictions parties cannot afford to sit back and delay the settlement of claims without good reason. To the extent possible, insurers and reinsurers should attempt to identify the interest provisions in the relevant jurisdictions early on so they are borne in mind when handing a claim. They should also regularly address the issue of whether a payment on account is appropriate to stop high levels of interest accruing on unpaid claims.

RIMS Mining Forum

Of particular relevance to the mining sector is the RIMS Mining Forum initiative. This is a forum set up to consider the lessons learnt from the major business interruption losses of the last five years, in terms of both the adequacy of policy wordings and the claim investigation process. A number of significant players in the mining and insurance sectors have been involved, including insureds, insurers, brokers, loss adjusters and lawyers (the last including Holman Fenwick Willan LLP). The group has been working to produce:

(i) A bespoke mining industry claims handling protocol which can be endorsed to a policy or operate as a best practice guidance note; and

(ii) A bespoke mining property damage and business interruption policy.

It will be interesting to see how the market responds to these efforts to improve standards and minimise the potential for disputes.

Stress testing of the risk management process

As part of the due diligence to be undertaken in the insurance procurement process, in addition to contract certainty, consideration should be given to stress testing the notification and claim process. The concept is to assess the likely claim scenarios a mining house may face and to proactively assess how the insured might respond to a particular claim scenario. The following may be of relevance:

1. **Cross department liaison and reporting:** For the efficient handling of large, complex claims there often needs to be an efficient cooperation between the risk management, legal and insurance departments.

2. **Claim notification:** An organisation's internal processes and procedures need to be robust enough to ensure that employees are aware of the reporting lines for the effective notification of claims and provide relevant information and documentation when necessary. Whilst this sounds a fairly straightforward issue, with large global organisations, different offices in different jurisdictions can be involved, creating issues of different time zones and sometimes language barriers which can slow down the reporting of losses and the safeguarding/capture of evidence/documentation vital to support claims.

3. **Claims protocol:** As we have eluded to above, it is essential to have in place an agreed claims handling protocol with insurers to insure that the process is managed with all the parties knowing steps that are required to be taken to minimise disputes and claims becoming distressed.

4. **Mobilisation of resources:** This involves not only internal but also external resources. In terms of internal resources, teams need to be put in place to secure witness, documentary and hard evidence where required to support an insurance claim. Such evidence needs to be secured as quickly as possible to guard against evidence being misplaced, memories fading and employee witnesses moving jobs. Similarly, external technical resourcing is likely to be required to aid the formulation of a claims submission and it is not uncommon for this to involve lawyers, engineers/technical consultants and forensic accounting services.

5. **Project management:** From a project management perspective, it should also be recognised that there are other parties who are likely to require information and who have an interest in the indemnification of an insurance claim. These may include shareholders and capital providers. Furthermore, thought has to be given, where relevant, to updating and reporting to authorities/regulators.

The input of a legal team (internal or external) who are used to dealing with large, complex, multi-jurisdictional claims can provide invaluable input into the robustness of an organisation's reporting and claims handling abilities.

The insurance broker

Safety and risk management is the absolute priority of those involved in the mining industry; if things go wrong, lives are at risk. Yet things do go wrong, despite the best efforts of all.

The financial wellbeing of the company is protected by means of insurance, providing protection of the P&L and balance sheet. In the last five years, it is estimated that total losses to assets and resultant business interruption have exceeded US$5,000 million.

Insurance can play a meaningful role in helping the business recover from a loss, be it a major loss or damage to assets such as flood, fire or breakdown of a SAG mill, any of which can lead to a loss of production (and therefore revenue); pollution of a local water source; expropriation of an asset by a foreign government or a class action against the directors and officers of a company. All of these have led to claims that have been paid by the insurance industry.

But the insurance market can be an intimidating environment. How do clients know what policies they should be buying, for what limits, at what cost and with which insurance companies? They need someone on their side, in their corner- an expert in the field and who can provide the impartial advice they need and provide the solutions they need for their individual risk issues.

An Insurance Broker is a professional firm whose prime purpose is to assist clients, as their agent, in understanding the risks to their business and advising appropriate risk transfer solutions available. In its most expansive form the role can include acting as an outsourced extension of the Insured's business. In discharging their duty to their client, brokers are expected to employ their in-depth knowledge of the client's industry and the insurance market to find and arrange an insurance programme suitable for the clients requirements.

This article will provide an insight into the role of the insurance broker from a client perspective. Stepping through the process, we will describe the broad range of services brokers generally provide to their clients, how brokers design and place an insurance programme in a manner advantageous to the client and how you should select your insurance broker. We also touch upon the effect the market cycle has upon the role of brokers and the pricing and design of a client's insurance programme at different stages in the cycle.

What services can be provided by an insurance broker?

The principle services a broker should offer are as follows:

- Assessment of physical damage, business interruption and liability exposure.
- Loss analysis and loss modelling.
- Design and placement of an appropriate insurance programme.
- Proactive claims management.

In order to perform these services in the most effective manner, a broker must be a specialist in the mining industry. Moreover, the broker will be expected to have a deep understanding of a client's business, including future projects and the current financial position of the client's company (which will influence the clients disposition to insurance). This will necessitate a close involvement with the business and its key personnel, both the senior management of the business as well as the site level managers and engineers who can give greater detail as required. Regular site visits are a necessity.

A broker has to build up a detailed risk profile of the organisation showing specific areas of exposure, including assets, revenue, cash flow, balance sheet, liabilities and personnel. A review of a client's business will also enable the broker to calibrate the client's appetite for risk when reviewed against various financial metrics of the company including P&L and cash flow considerations, as well as the health (or otherwise) of the company's balance sheet.

The life-cycle of a mine

All activities from exploration to eventual closure can be insured if the client requires (see diagram on pp20-21). Particular points for consideration in the early stages of the life of mine are:

- The capital expenditure of risk control implementation can often be a burden on an already difficult mining financial position, especially on those companies currently or recently coming into production after completion of the construction phase. The importance of working with an insurance broker who is experienced in the implementation of risk control and risk transfer in both phases is critical. Not only will this prevent the possibility of a loss falling between the construction and operational policies (and therefore the subject of a dispute and possible denial of cover), but if the construction policy is designed and placed properly, the subsequent operational policy will be considerably easier to negotiate meaning better cover at better terms for the client.
- The trend of financiers requiring certainty around both construction and operational insurance prior to releasing project funds is increasing. Moreover, the need for security around debt servicing ability beyond the construction period and into the early production years is an important factor in that ability to raise debt. To achieve a level of certainty on policy coverage being available at acceptable terms requires a change in traditional placement strategy, ideally with continuity across the placement and risk management team within the broker. There is a need to make a conscious decision that regardless of what phase a project is in, the ultimate goal must be a successful operational insurance programme.

"The importance of working with an insurance broker who is experienced in the implementation of risk control and risk transfer in both phases is critical"

Key areas of development

Exploration & Evaluation

Project Finance

Construction & Commissioning

Broker services

Exploration & Evaluation

- ✓ Exploration Contract Reviews
- ✓ Insurance Program Reviews
- ✓ Country Risk Reports
- ✓ Country Insurances Compliance Advice

Project Finance

- ✓ Contract Insurance Clause Design
- ✓ Risk Workshop
- ✓ Design Risk Engineering
- ✓ Insurance Program Design
- ✓ Indicative Premium Calculations

Construction & Commissioning

- ✓ Fire Suppression Design Advice
- ✓ Project Insurance Design
- ✓ Construction Contract Reviews
- ✓ Construction Risk Workshops
- ✓ Advance Business Interruption Reviews
- ✓ Site surveys Injury Management
- ✓ Contractor Enrolment Systems

Key insurance products

- ✓ Construction Third Party Liability
- ✓ Construction Material Damage/Advance Business Interruption
- ✓ Construction Marine Cargo/Advance Business Interruption
- ✓ Project Specific Workers' Compensation
- ✓ Project Specific Professional Indemnity
- ✓ Project Specific Income Protection

Operations

- ✓ On-going Contract Reviews
- ✓ Operational Risk Workshops
- ✓ Risk Engineering Surveys
- ✓ Valuation Advice
- ✓ Business Interruption Review
- ✓ Insurance Program Design

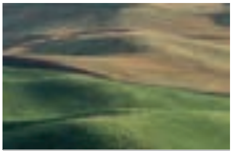
Sales & Marketing

- ✓ Contract Reviews
- ✓ Customer and Supplier Exposure Reviews

Expansion

- ✓ Combined Operational and Construction Program Design
- ✓ Construction Contract Reviews
- ✓ Risk Workshops
- ✓ Risk Engineering

Care & Maintenance or Closure



- ✓ Claims run-off Management
- ✓ Care & Maintenance Plan Design
- ✓ Valuation Services
- ✓ Insurance Program Design

Operations / Sales & Marketing	Expansion	Care & Maintenance or Closure
✓ Operational Third Party Liability	✓ Construction Third Party Liability	✓ Third Party Liability
✓ Operational Material Damage / Business Interruption	✓ Construction Material Damage	✓ Material Damage
	✓ Marine Cargo	✓ Construction Marine Cargo
		✓ Long Term D&O Liability Run-Off

- ✓ Marine Charterers Liability
- ✓ Environmental Impairment
- ✓ Construction / Mobile Plant & Equipment
- ✓ Workers' Compensation
- ✓ Country & Political Risks
- ✓ Directors' & Officers' Liability (D&O)
- ✓ Income Protection, Life & Health

- The policy wording, insurer panel and appointment of risk engineering all require a primary focus on the question: "How will this benefit the operational programme?". The design of the construction insurance wording can provide the perfect opportunity to deal with testing and commissioning, ramp-up and minor rectification works issues often encountered with operational insurers. Taking away these risk issues from the operational market through a more robust construction wording allows for clearer focus on the more important operational coverage issues as well as eliminating most of the grey areas of where cover sits during handover.
- The use of an insurer panel that can offer construction and operational insurance will provide both a long term partnership and insurers with a more flexible approach to policy design. Their understanding of the operational risk will be well advanced prior to any requirement for cover and they will have had a vested interest in the design of operational risk control throughout the construction phase.
- When compiling the risk profile, the detail around operational risk identification, quantification and control should be the primary driver. Plant design decisions must incorporate these risk control measures well before construction completion to avoid costly retrospective works or an inability to incorporate these works. A typical example being blast walls between transformers and control rooms, where the early intervention can alter that design to provide sufficient clearance or the inclusion of the construction of blast walls during the construction phase rather than a retro-fit in the middle of an operating site where the works are either very costly or not possible.

"The design of the construction insurance wording can provide the perfect opportunity to deal with testing and commissioning, ramp-up and minor rectification works issues"

Throughout the construction period an on-going commitment to operational risk management and engagement of the property insurance market will have a positive effect when the time comes to arrange the annual insurance programme.

Risk transfer / insurance policy programme design

The objective of any programme design is to meet the clients demands and needs, so each programme will of necessity be different and bespoke as no two mines are the same and no two clients have the same risk appetite. The following will be taken into consideration:

- **The limits required:** How much cover is required to protect against the worst case scenario.
- **The amount of risk the client wishes to retain:** This can range from relatively low deductibles where clients wish to transfer as much risk as possible to larger

clients who may wish to retain more, sometimes very substantial amounts. This can often be done by way of an inhouse risk retention vehicle, or captive, which collects premiums for the risks that it runs, with objective of building up a fund over time to retain more risk or coverages which are difficult to transfer to the traditional market. The benefits includes retention of premium within the client organisation, but obviously should a loss occur, this is at risk.

- **Premium budget:** In certain cases, an insurance programme will be designed around the premium that a client wishes to spend. This will inevitably mean that concessions need to be made in limits, coverage or risk retention to meet the premium budget. Such a strategy should be considered very carefully before implementation as it can leave the client retaining more risk than they would wish, or indeed may be capable of.
- **Any requirements by lenders:** These can often be very onerous as financiers can insist on clients buying more cover than they otherwise would due to adverse risk appetite on behalf of the lenders.
- **Market selection:** Where a choice of market exists, brokers will help clients evaluate the options available using the following criteria:
  - Claims service – the ability and willingness to pay claims quickly.
  - Competitiveness – the terms each market is willing to offer.
  - Coverage – the scope of cover or limits each market is able to offer.
  - Flexibility – how willing is the market to work with the client and broker to find a solution acceptable to both parties.
  - Security – the financial capability to pay.
  - Relationship – this can include other product lines written by the same insurer or a positive experience of previously good service or claim payment.
  - Representation – is the market licensed in the necessary domicile(s).

Once the most appropriate programme design has been established, it is the broker's duty to then make a fair presentation of the risk to insurers. This means that all material facts (ie those that would influence the decision of a prudent insurer) must be disclosed so that insurers are able to assess their exposure and provide terms.

Once potential insurers have been selected, presenting the risk to the underwriters becomes a fundamental part of the broker's role. The presentation must document the cover required (ie sums insured, limits of indemnity and the wording that is to apply) and detail all material information to support that request. The better the underwriting submission, the better the terms will be that brokers can obtain. A good presentation to insurers also lessens the risk of a claim being declined or reduced on the grounds of non-disclosure or inadequate information.

"In certain cases, an insurance programme will be designed around the premium that a client wishes to spend"

The depth of information must be a function of the size and complexity of the risk, but the time invested in getting this key function right will be rewarded by less work and better service to the client.

It is recommended that clients be involved in the presentation of the risk to underwriters, where appropriate (ie if the premium is significant or the risk more complex than others). This combines the client's knowledge of their own risk with the brokers knowledge of, and relationship with, the insurance markets to obtain the best results. It is important to emphasise that these discussions should be very open – the client needs to understand what concerns the underwriter may have that is affecting the terms he is offering so either an explanation can be offered to reduce this concern (and therefore the cost) or steps taken over time to mitigate the risk itself.

> "Once terms have been received from the insurer, the broker will review the indications and compare them against the demands and needs of the client"

Once terms have been received from the insurer, the broker will review the indications and compare them against the demands and needs of the client. The ultimate goal being to present to the client the coverage requested for the most competitive price. It is essential that a competitive price is not obtained at the expense of reduced cover, unless the client is made aware of and agrees to the position. Equally, it may be necessary to explain to a client that a higher premium is justified for wider coverage. Ultimately, it is the job of the broker to give a client all the information they need to make an informed decision. Whilst the broker can recommend which carrier to go with, it is the client who has the final say.

Global programmes

Many companies growing through acquisition will find themselves in a position where they have multiple insurance policies covering their operations worldwide and, for most, consolidation of these covers into single and class-specific global programmes will bring benefits to both the group and their operations.

As well as providing savings through leveraging the group's purchasing power, as you would achieve with any group procurement, a global programme:

- Offers consistency and certainty of cover.
- Provides central control of cover and cost.
- Allows a global approach to risk management.
- Provides greater control and consistency of approach to losses worldwide.
- Facilitates participation in your own risk by the parent, for instance through a captive.
- Gives the ability to use premium allocations as a tool to encourage better risk management.

That said, there are also various challenges with a global programme that need to be considered which centre around local legislation in the territories where the group operates, push back from operations to the level of cover purchased globally and therefore the premium allocation the operation is given and, certainly in the formative years, an increased level of workload at the centre to put the programme in place. The broker will help the group through each stage of this process, providing details of territorial requirements, assistance in premium allocations, local support for your operations where required and continued support at group level to ensure consolidation is as smooth as process as is possible.

Emerging risks

Traditionally, the mining community has classified country risks as just part and parcel of investing in emerging markets. It goes without saying that operating in a highly politicised sector will inevitably force mining companies to confront challenges rooted in country risk; such as unpredictable government interference, changing legislative and fiscal regimes, cancellation or suspension of concession licences, and political violence. Mining companies have all developed their own methods of managing such country risks, including: community projects, to balance sheet reserves, ensuring compliance with contracts, local law and regulation, crafting a solid reputation, strategic local partnerships and the use of Political Risks Insurance (PRI).

In the last five years geopolitical forces have exerted a more decisive impact on business performance. We know that the global financial crisis, in conjunction with the commodity price boom, had led to an increase in resource nationalism and government interference in a number of sectors, including mining. Country risk issues hit the newspaper headlines with increasing regularity; from the controversial mining 'super tax' in Australia, to the renegotiation of mining contracts in Ghana, to protest violence in Peru and deadly strike action in South Africa.

> "In the last five years geopolitical forces have exerted a more decisive impact on business performance"

What's changed?

Risk landscapes in many mining territories are evolving quickly as governments seek new ways to secure economic growth and political stability in the face of unrest and disenchantment. The global financial crisis was a milestone in respect of how country risk was perceived by investors. Many risk trends have accelerated at a speed that was inconceivable before 2007.
When commodity prices were booming, it was to be expected that some governments would pursue nationalistic policies. Nowadays government interference, such as the renegotiation of contract terms, stems from a need to secure addition-

al revenue streams in the face of global economic slowdown, with the fall in price in some commodities, most notably gold, leaving holes in public finances.

Governments recognise the role that populist policies can play in averting political unrest. Governments in emerging markets are keen to spend to secure stability. While the effects of the financial crisis continue to rage, including: high unemployment, the drying-up of bank credit, the draw of extremism for disenchanted, unemployed youths, and rising food and fuel prices. These spending programmes require funds and too often the mining sector is seen as a suitable cash cow. Similarly, while strikes and protests have always been on the radar, and mining companies are experienced in dealing with them, the growing frequency and severity of strike and protest action is a new concern.

The role of the PRI broker

The problem for risk management teams is that political risks are evolving far quicker than they used to, and that the past no longer serves as a reliable guide for country risk. This means that the mining companies must begin to evolve their risk management methods in line with the changing risk landscapes.

A PRI broker can be relied upon to support mining companies that are trying to reconfigure their risk management, or, wish to better understand their place in the world post-financial crisis. Recognising that political risks are incredibly broad, a broker will help their client to understand their risk profile and offer guidance as to whether risk transfer, via the purchase of PRI, should be a final stage in the risk management process.

Strategic analysis

A PRI broker should first carry out strategic analysis of the mining client's investment portfolio, using scenario modelling, stress-testing, and ratings. The broker should benchmark a company's industry outlook and help the client identify, prioritise and manage political and economic risks using a variety of sources. It is also critical for the investor's risk profile to be a core component of such analysis as each investor's risk profile will be unique and shaped by their own characteristics.

It is preferable to rely on a broker with in-house country risk analysis capability. While there are a number of country and security analysis companies, inevitably, these analytical firms are one step away from the risk and do not have to make commercial decisions based on their analytical output. A broker will not just highlight risks, but will be able to offer solutions, as they understand how the insurance market can respond

The strategic review should help the mining company understand whether the purchase of PRI would be a suitable or necessary investment that could underpin the company's risk management in respect of country risk. Mining companies know that they can shape the risk environment in which they operate – and that their actions can directly heighten or reduce political risk. However, there are some country risks that are beyond the control of the mining company, and this is where PRI can assist.

At the same time, it is important to remember that PRI cannot remove all risk – for example, insurance cannot 'fix' a bad contract signed with a host government. The decision to purchase PRI should be grounded in the understanding that it acts as an effective safety net, when other risk mitigation methods have been exhausted.

Designing and structuring the PRI wording

There are a variety of country risks that mining companies can transfer. Given the unique and highly nuanced nature of country risks, every PRI policy is written on a bespoke basis. The utilisation of analysis at an early stage, often alongside the client's existing risk management methodologies, helps the client understand which risk perils need to form part of the policy wording.

Outlined below are the main insured perils for a typical policy for the mining sector:

- Confiscation, Expropriation, Nationalisation & Deprivation.
- Operating Licence / Concession Agreement Repudiation or Cancellation.
- Export Embargo / Inability to Export.
- Forced Abandonment.
- Selective Discrimination.
- Forced Divestiture.
- Currency Inconvertibility & Transfer Risk.
- Political Violence.

A key point is the fact that the main asset of a mining is the *right* to receive a share of the product mined or revenue earned, rather than the value of the actual commodity, the mining infrastructure or equipment. As such when assessing coverage requirements, the policy should definitely include the removal of the right to mine (for example, via the suspension or cancellation of a licence), or inability to operate the mine (for example as a result of a strike, or a war).

> "The decision to purchase PRI should be grounded in the understanding that it acts as an effective safety net, when other risk mitigation methods have been exhausted"

Placement into the PRI markets

The broker's market selection strategy is extremely important and should incorporate options from both private and public sector underwriters.

The private PRI market, consisting of Lloyd's of London and the company markets, remains vibrant and continues to expand. By the first quarter of next year there will be in excess of 50 commercial PRI underwriters, which is the largest the market has ever been. This is reflective of the increasing demand being seen for credit and PRI coverage and the continual flow of investment capital into the insurance market.

PRI is also provided by the public markets, including: Export Credit Agencies (ECAs) and multilateral agencies, such as ADB, ICIEC and MIGA.

Both private and public sector underwriters offer different strengths and benefits to insured and a PRI broker should consider placement options across both sectors in order to utilise the best that both markets have to offer, to deliver an effective risk syndication strategy. The key is in identifying the insured's requirements, both short and long term, and then aligning these with the right risk partners.

The strategic review of the mining client's risk profile by the broking house can have a positive influence on the insurer selection process. PRI insurers look for insureds that are 'partners'; companies whose interests are aligned with the insurer in respect of perception of risk, risk appetite and a strategic interest. Companies that demonstrate the use of advanced analytical practice note that their business is better received by insurers, in turn securing preferable coverage terms, often at more equitable rates.

PRI and the 'competitive edge'

PRI has a number of benefits, both tangible and intangible, and can deliver investors and banks a real competitive edge when the product is correctly utilised and applied.

Firstly, the financial crisis has directly produced an increase in project finance/reserve-based lending requirements in the mining sector. As many of the project locations present country risk concerns and restrictions for lenders to the sector, PRI has become an increasingly important component of security requirements for lenders. The decision to purchase PRI can assist mining firms in their negotiations with financial institutions and importantly can reduce the cost of financing.

> "PRI enables the mining company to focus on what matters – the mining operations"

Secondly, PRI enables the mining company to focus on what matters – the mining operations. Country risks, due to the fact that they are in a constant state of flux, are extremely difficult to monitor and analyse. The interplay of security, economic and political elements means that changes in a region or a country's risk landscape will be the start of a chain of seemingly unconnected events which further down the line manifests into a risk that can cause loss. With PRI in place, risk management can be reoriented to other risks that are more quantifiable and, can help with the justification of operating in high-risk territories PRI allows mining firms with a global portfolio to bring the level of country risk back to 'acceptable' levels, thereby balancing the risk within the portfolio.

Finally, investors in emerging economies have in many instances been supported by the network of investor protection afforded by bilateral investment treaties

(BITs). These agreements between states are designed to afford real protection against government interference, or policy change that makes investments unviable.

Most BITs offer arbitration under the ICSID. However, there is a widely held view amongst governments that BITs are too investor-friendly, which has led to a backlash, resulting in a number of exits from BITs, by states such as Ecuador and South Africa. More exits undermine the ability of investors to use ICSID to resolve disputes, notwithstanding the time it already takes for arbitration proceedings to be concluded. The purchase of PRI can offer a highly attractive alternative to relaying solely on BITs as payment for a claim can be made far more quickly than the time it takes to conclude arbitration proceedings, allowing the mining company to get back to business more quickly.

Selecting your broker

This important decision is usually the responsibility of the risk manager, finance director or the procurement department of a client's business. There are three principle categories as to how a client may select their insurance broker:

- **Referral:** A recommendation may be made from a variety of sources including peer groups, competitors, financiers, shareholders and insurers. It is based on another party's experience of the broker in question and their expertise in the services they provide.

- **Request for Proposal (RfP):** Larger clients run a formal tender process. In their response, brokers will be required to illustrate their suitability, capabilities and often an estimate of the fees they will charge to act for the client. As a minimum, their response should demonstrate:
  - An understanding of the client's business and needs.
  - Advice on what coverage the client should be considering.
  - The service standards their will offer.
  - Their credentials in the insurance market sector.
  - References from other clients in the mining sector.

Where a business may not have the in-house skills to manage the competitive procurement exercise successfully this function can be outsourced.

- **Previous Engagement & Knowledge**

Often the decision makers will have prior experience with a broking house, or particular personnel within a broking house, which enables them to identify a suitable broker.

In some situations a client will work with a panel of brokers for different business risks and insurance product solutions. This is often done to ensure each broker has a particular expertise in a specific field or insurance class.

The promise to pay that lies at the heart of the policy

The insurance of mining risks is a complex business, with losses involving loss of production or business interruption leading to very significant claims very quickly, especially during high points in what has been, for most, a strong commodity price cycle over the last few years. Against this backdrop the need for insurance as a risk transfer mechanism assumes a greater importance. However whilst the breadth of cover needed, and the pricing are key factors that need to be considered, the insurance is ultimately only as good as the claims service being sold to the client and their ability to be reimbursed for losses.

The unprecedented series of mining losses, that started with the Queensland floods of 2010 (and followed the earlier 2008 floods) have continued, and yet many of these claims remain unresolved. This is in stark contrast to losses in other sectors (such as oil and gas), which in many cases have had loss events that are just as expensive and complex and yet have been resolved in a timely fashion.

The mining sector claims experience has been one that is dominated by complex layered insurance programmes with no overall claims agreement parties. Whilst these programme structures may have benefits for pricing and the coverage granted, the importance of managing the claims process is imperative. Just obtaining clear instructions from insurers, and making sure that they all act with one voice cannot be over emphasised. Selecting the experts with the right experience for both the insured and insurer is fundamental to ensuring that a claim handled smoothly and timely. The mining industry has complex issues and whilst many organisations advertise their abilities in this field, very few have the knowledge and experience to deliver the service required to navigate a difficult claim to a successful conclusion.

Whilst many insurance brokers actively advise their clients during the buying of insurance, they overlook the importance of managing the claims process. Most of the larger mining companies are sophisticated purchasers of insurance, however, they are not necessarily experts in policy interpretation. Any broker effectively managing mining insurance claims should have the requisite knowledge and experience to ensure that they are able to advocate fully both on the procedural aspects (making sure the appropriate experts are appointed and ensuring quick response times) as well as being able to interpret policy language.

Unfortunately, as claims have increased with higher commodity prices, it is not uncommon for one or both parties to retain experts, and often coverage lawyers, at the outset of a claim and quickly become entrenched with polar views on a claim. Often the immediate response to this situation is for the insured to appoint one of the many claims advocacy firms. Whilst these firms clearly have a role, a good broker will either not allow the claim process to reach the stage where an outside advocate is felt to be necessary, or if that is unavoidable, have the necessary skills to be able to represent their clients fully and reach a satisfactory conclusion without the need to resort to this additional outsourced service. It is in these circumstances that the role of a claims broker becomes paramount.

Due to widespread dissatisfaction with the frequency of disputes and the duration of the process for some very high profile claims, there has been a market-wide initiative to agree a claims protocol for the mining industry. The basic premise of the protocol is to agree upfront a transparent route map for the handling of a claim. This starts with agreeing a nominated expert who will act as a finder of fact for both parties. The expert will just report on the circumstances allowing the insured and insurers to address any policy interpretation issues.

There is also an agreed timeline for reporting, that not only agrees on the frequency of the reports but also the contents. It aims therefore to either obtain underwriters early confirmation of coverage or to identify any areas of dispute.

"There has been a market-wide initiative to agree a claims protocol for the mining industry"

The agreement then details a dispute resolution process aimed at finding a quick and cost effective resolution, rather than costly and ultimately harmful litigation. It is yet to be seen how widely the protocol will be used but it reflects the desire for the mining community to improve on the current state of claims service, and is long overdue.

Managing the market cycle

Much like the mining industry, the insurance industry is a cyclical one. During periods of overcapacity (or softening), there is more competition amongst underwriters for the business, generally as a result of either profitable underwriting results or, as is the case now, a surplus of capital looking for a return on investment. Periods of softness lead to the following:

- Lower insurance premiums.
- Broader coverage.
- Reduced underwriting criteria.
- Increased capacity.

When the market turns, the opposite applies. Inevitably, either loss frequency or severity increase, due to wider coverage or lower retention of risk by clients. The premium volume has also reduced which results in a deterioration of profitability into a deficit and, whilst this may be sustainable in the short term, it is not over time unless outside influences come in to play (such as the current thirst for return on capital that is not available elsewhere).

The current market conditions are soft and it is difficult to see an insurance event that will change this. However, should the economic conditions change and satisfactory ROI become available elsewhere, the market could change quite quickly. Your broker should always take into account the cyclical nature of the market and offer appropriate advice. Sometimes, the best short term deal is not the best over time, but often it can be too good to ignore.

Remuneration

Brokers are typically paid by way of commission deducted from the premium paid to underwriters, or a separate fee paid by the client. In both cases, it is the client who is paying the broker as the premium payable to underwriters would be less if commission was not applied. Commission is the traditional method of payment, but the commission model could be seen as counter-intuitive, because, as the broker will be paid in proportion to the premium, the broker will be paid more as the premium increases. This does not encourage aggressive marketing but rewards mediocrity and, further, can lead to a conflict of interest for the broker in the event of different premium options being offered by underwriters. Some brokers supplement their revenue by accepting additional commission from underwriters in exchange for information on their portfolio of clients or based on overall premium volume. In all instances, clients should ask for full disclosure of all revenue earned either directly, or indirectly through any such arrangements with underwriters to ensure they are comfortable with any potential conflict of interest.

In conclusion

The mining business can present challenges that many in the insurance market do not understand. This can lead to claims being more complicated than they should be and, in the worst cases, denied completely through a lack of knowledge, explanation or communication. It is critical that clients use a broker who has such knowledge and can articulate, with your help, the exposures inherent in the business but in your risk in particular, to underwriters. Specialist brokers know which underwriters can accept which risks, which are the most competitive and provide the best solution because they are active in the specialist market every day. They have relationships with the underwriters built on a portfolio of business, mutual respect, and a track record of delivering results. Specialist brokers will:

- Provide specialist advice, even if it is not necessarily what the client wants to hear. They will become a trusted advisor over time.
- Understand the client's business, identify their insurance needs and help communicate these to the right underwriters.
- Provide benchmarking data on peers and competitors insurance arrangements.
- Plan ahead for changes in the client's business.
- Help manage any claims that may arise.
- Manage the market cycle.
- Secure the most appropriate coverage, at the best terms available.

If your broker is not doing these core services, then you do not have the right partner and you may wish to review other options. Having the wrong broker can be as bad as not having a broker at all.

This article was compiled from contributions by members of the JLT Mining team. For more information on anything contained in this article or for any other needs, please contact mining@jltgroup.com

Mining insurance underwriters

The basic concepts of insurance as a means of risk transfer are as old as civilisation and were developed as the need arose for individuals to protect themselves against changes in fortune. The earliest forms of insurance were for marine cargo for which references date back to the Babylonians in the second millennium BC. However, it was not until the late 17th century that Edward Lloyd opened his coffee shop in the City of London in what was to become the precursor to the modern insurance industry.

Although pre-dated by the marine business, fire insurance was the first to achieve corporate status and traces its roots to the Great Fire of London in 1666. In the aftermath the first fire insurance companies were established but it was not until the mid-19th century that fire and other types of insurance became widely available overseas.

Similarly, the history of the mining industry can trace its roots to the dawn of civilisation and by modern times, there are few countries around the world that have avoided any form of mining.

Despite its long history, it was not until the industrialisation of the industry in the late 19th and early 20th centuries, and a corresponding mechanisation with higher capital investment requirements, that resulted in a growing demand for the insurance of mining industry risks. As in many other innovative areas of insurance, the London insurance market has played a major role during the subsequent period in developing insurance products for mining companies around the world.

"The very nature of mining results in a business that is constantly changing and developing and any insurance product needs to be able to react appropriately"

Mining industry challenges

The mining industry presents some unique challenges for insurance companies. The very nature of mining results in a business that is constantly changing and developing and any insurance product needs to be able to react appropriately. Against this ever-changing background, mines and their associated infrastructure can present a diverse nature of risks unparalleled in any other industry. It is these fundamental differences between mining risks and any other industrial risk which have been the cause of so many problems with the insurance of mining companies.

Typically whenever a company wishes to build a large industrial complex, their decisions will be determined by factors such as location in relation to markets, access to skilled workforce and raw materials, ease of logistics, availability of power and other utilities, etc.

A conveniently located and generally flat piece of real estate will be chosen to facilitate the construction of buildings which will be laid out with due consideration to workflow and traffic movements.

Construction will allow for future expansion and the plant will be built for a long, and most probably, indefinite life. Consideration will also be given to the relative risk of working in particular countries and jurisdictions especially with respect to tax regimes and incentives.

A mining company simply doesn't have this luxury. The mine can only be constructed at the site of the deposit that is to be mined and this can introduce a number of interesting challenges, not least of which include:

- **Topography:** mine development often necessitates extensive earthworks and terracing and the development of an access infrastructure in potentially treacherous terrain.
- **Remote locations:** as economically attractive deposits become harder to find, the logistics required to access the mine site can be daunting whether it is travel to a remote island, virgin jungle hundreds of miles from the nearest port, or an icebound peninsular accessible by sea for only a few months a year.
- **Access to ore:** whether the ore deposit is found near to the surface and can be exploited in an open pit or is more than 2,000m underground, the technical issues in accessing and then extracting the ore are amongst the most challenging facing engineers in the world.
- **Environment:** mines are often constructed in previously undeveloped parts of the world and in environmentally sensitive areas that require careful consideration and handling.
- **Utilities:** access to national power supplies and water sources in remote and undeveloped areas is a major issue and typically requires either the development of long supply lines and/or local generating infrastructure.
- **Skilled workforce:** similarly, a remote mine will not have access to a local skilled labour pool which will mean that labour has to be transported and possibly accommodated at site.
- **Natural perils:** since the mining company must go to where the deposit is, there will naturally be an exposure to perils associated with various parts of the world whether it be earthquake in Chile, windstorm in the Philippines, or flooding in Australia. Due to the geology of mineral deposits, mines are commonly located adjacent to rivers and lakes and mountains that can present a potential flood or landslide risk.
- **Country risks:** not all jurisdictions are mining friendly and mines can be exposed to political risk, sovereign debt risk, activities of illegal or artisanal miners, risk of expropriation, strikes and riots, terrorism, etc.
- **Life-of-mine:** the deposit to be mined will have a finite life and once exhausted the associated plant may have no further economic value. This in turn will determine the scale of the investment, particularly if the deposit will be exhausted in only a few years.

The Twangiza gold mine operated by Banro Corporation in the DRC. The topography at mine sites can be challenging particularly in the absence of any local infrastructure

The simple fact is, that mining sites are often located in remote locations with no existing infrastructure, and no access to a skilled workforce, requiring the development of an extensive and integrated mine network in some of the world's most inhospitable terrain. It is also true that many of the 'easy' deposits in easily accessible and mining friendly jurisdictions have already been developed and many of the challenges noted above will become more prominent for future developments.

The achievements of mining companies over the course of history to overcome these challenges are quite remarkable although many members of the public will be totally unaware of the quite extraordinary lengths that a mining company is forced to go to in order to produce the materials that modern life depends upon. Certainly there are numerous insurers who have first appreciated many of these industry unique risk features at the point that they have been presented with a large claim by a mining company!

Many insurers are either unaware of or misunderstand these risks.

- Incidents and claims can identify risks and exposures previously unknown or misunderstood by both miners and insurers. These can highlight areas of cover being provided by insurers for which they had no understanding of.
- Volatility in the mining industry can escalate the quantum of loss events due to unforeseen price rises to a level at which insurers thought themselves unexposed.
- The lack of certain types of claims historically would have previously hidden potential coverage issues.
- New technology and processes can introduce new risks and hazards for which existing insurance products were not designed for.

The points raised above illustrate that in order to successfully underwrite this class of business, it is critical for insurers to understand the dynamics of insuring large, complex, industrial operations.

All too often the perceptions of mining by the uninitiated are formed from fear of the unknown and from the mass media and their sensationalism of events and incidents in the mining industry. For example, the general perception of underground mining is that it is highly dangerous, however, it is a fact that the majority of large losses, financially, have been associated with above ground mines and surface infrastructure. It is also a surprise to many that there are many industries that have a far worse incident rate than mining, including agriculture and forestry, transportation and warehousing, healthcare, arts and entertainment, the retail trade, etc. Yet insurance has historically been, and is still, driven by market perceptions of risk which has resulted in a reduced appetite by insurers for this class of business and a corresponding limitation of capacity and cover for many miners, particularly for underground mines.

The modern mining insurance market

Large industrial risks need to purchase sufficient insurance to indemnify them for a catastrophic event that may cause widespread damage to their property and result in a significant impact to their business during the period this property is repaired or replaced. For a large mining company, this is in all probability a financial exposure that can be measured in hundreds of millions of dollars and sometimes even more. A risk of this size cannot be underwritten by a single insurance carrier and is typically shared amongst a panel of individual companies. For the largest mining risks it would not be unusual for upwards of 30 different insurers to participate in a single mining company's insurance programme. It is at this point that the difficulties can start as there are only a relatively small number of insurers that specialise in mining industry business. The balance of the insurance placement will be with those that underwrite this class as part of their large industrial risk portfolio.

There has long been a core group of insurers and reinsurers who do understand mining risks but it is a limited group of probably less than 10 companies around the world. The balance of underwriting capacity that is required for many of the larger mining risks is provided from a supporting market that will probably not have the same appreciation of the risks involved. The financial capacity available from this supporting market will vary during the periodic cycles that take place in the insurance industry. When the market capacity is high (ie oversupplied) there is considerable additional competition for all classes of business and many will be tempted to become involved in the mining industry business despite a fundamental lack of knowledge of the industry. The reverse will obviously apply when market capacity shrinks.

"There has long been a core group of insurers and reinsurers who do understand mining risks but it is a limited group of probably less than 10 companies around the world"

Whilst the above may appear completely obvious it has specific consequences for the insurance of mining risks. One of the basic principles of insurance is that any loss being indemnified by a contract of insurance has to be both unforeseen and fortuitous. The special nature of mining means that the dividing line between fortuitous risks that can be insured and those that lack fortuity and should not be insured is a very narrow one. As can be seen from the list of challenges noted earlier that many miners face when developing a new mine, there will be a number of hazards that will present themselves which in all good faith cannot be considered to be unforeseen and therefore a consequent loss as unforeseen. As with any business opportunity, there will be significant entrepreneurial risk that cannot be transferred to insurers. These nuances are often misunderstood by some insurers in the supporting market with the result that they can sometimes be persuaded to provide cover that all too often results in an unsustainable level of insurance claims. The ultimate consequence of this is that they subsequently pull out of underwriting mining risks and the whole market merry go round starts all over again.

> "The massive expansion in the mining industry during the last decade during a time of rapidly increasing commodity prices spawned a number of 'super claims"

These market cycles are usually predictable both in frequency and consequence. However, the experience of the last 10 years has been particularly remarkable as the normal insurance market cycle 'bumped' headlong into the booming mining industry. The massive expansion in the mining industry during the last decade during a time of rapidly increasing commodity prices spawned a number of 'super claims' whereby individual losses were being presented to insurers that ran into hundreds of millions of dollars. Some of these claims exposed issues that had simply not been experienced in the same way before. In 2008 these losses peaked at an unsustainable level.

As mining commodity prices rose there was a stampede to bring on additional mining capacity, in the form of expansion projects and new operations, as quickly as possible. This created consternation for insurers from a number of related aspects:

- Significant inflation of property replacement values as the price of construction materials increased (especially steel and by extension its raw materials including iron ore and metallurgical coal) and contractors increased their costs as order books swelled.
- Delivery times for key items of plant and machinery increased dramatically as the rise in demand massively outweighed the ability of the existing manufacturing capacity to supply. The impact of this was huge with tables published during the beginning of 2007 suggesting that, for example, the lead times for grinding mills increased from 18 to 24 months, haul trucks from six to 24 months, and mine tyres from four to 24 months.
- Skilled labour suddenly became in short demand, salaries rocketed, and the turnover of staff increased as the higher salaries afforded mobility within the

labour pool between mining operations. The natural consequence of this was a reduction in the level of knowledge retained in the operations and a general reduction in expertise and skills at a site level.

With higher commodity prices and hence revenue for many mines, the business driver quickly becomes production focused which can often cause conflict with the needs of plant maintenance. Over time this will adversely affect plant availability, increase the cost of production, and potentially increase the rate of losses. Anecdotally the situation was shown to be exacerbated through the loss of experienced personnel due to the shortage of skilled labour in the industry (as noted above) and the premature promotion of young and inexperienced engineers into senior management positions before they have realised the role that good maintenance has in ensuring year in, year out steady production. This is by no means applicable to all mining companies but there is sufficient evidence to substantiate that the introduction of a certain level of naivety into a business can, in some cases, prejudice previous good practice.

"A notorious example of the risks associated with new technologies includes the development of the wrap-around motor, or GMD, in ever larger diameters to drive grinding mills"

With average ore grades reducing (for example, one source quotes the average copper head grade at producing mines decreasing by up to 30% between 2001 and 2002) many operations are bulk mining and increasing numbers of miners are looking to new technologies to produce the required growth in plant throughput at a reduced unit cost. Similarly, new technology can result in ores that were previously difficult to process becoming economically attractive (eg lateritic nickels and refractory gold ores). New and innovative technology can introduce a number of benefits to miners, not least of which is increased production, better efficiencies, lower costs, and increased availability, however, there will always be a certain amount of risk associated with any new process which increases and introduces new potential exposures to insurers and, even more so, to mine owners.

A notorious example of the risks associated with new technologies includes the development of the wrap-around motor, or GMD (gearless motor drive), in ever larger diameters to drive grinding mills. Whilst a discussion of the details of these losses is not warranted here, the scale-up of these drives and their use in hitherto untested environments and altitudes introduced engineering problems not previously considered.

It is also worth noting that as technology advances and bigger and better machinery and equipment is developed, there will naturally be a tendency to concentrate production through a smaller and smaller number of machines. Twenty or 30 years ago, ore processing plants were built with numerous mills of which at least two or three would provide on-line spare capacity, and one or two would be used as sacrificial spares. This resulted in a large degree of processing flexibility and redundancy. The use of smaller and less sophisticated equipment would also facilitate repairs and/or replacement within a short period of time, all of which combined to significantly reduce the exposure to periods of long production downtime, and hence business interruption, in the event of a loss. In today's modern ore processing plant thousands of tonnes per day can be fed through a single mill, and whilst major improvements in efficiencies and costs can be realised, there is a significantly increased exposure to business interruption not only from the use of a single machine but also the longer lead-times with the repair and replacement of more complex components.

The end result for insurers is that they can quite often be at risk of contributing for losses associated with the failure of, what could be argued, the use of proto-typical or experimental equipment and processes. The future will unveil many technological advances that will become necessary to maintain and increase mining outputs from more difficult ore deposits; these will continue to present insurers with their own challenges.

Market volatility

The mining industry can be characterised by the volatility of the commodity markets. Although there will always be a general upwards trend in commodity prices, at least for the foreseeable future, fuelled by our insatiable demand for the trappings of modern society particularly from the developing world as they march relentlessly towards greater degrees of urbanisation, there are periods of massive price volatility. This causes uncertainty in the mining sector and leads to successive periods of boom and bust.

Whilst the commodity markets will wax and wane, and mining revenues ebb and flow, the cost base for many miners typically will only trend upwards following increases in utility prices, transportation costs, salaries, taxation, etc. This is exacerbated by decreasing ore grades and run-of-mine output, and the costs of accessing deeper and remoter deposits. One study suggests that cash operating costs at some mines have increased significantly, more than tripling over the past 10 years.

"The future will unveil many technological advances that will become necessary to maintain and increase mining outputs from more difficult ore deposits; these will continue to present insurers with their own challenges"

The possible consequences for insurers in the leaner years is that premium income falls and miners do not necessarily have the funds available to invest in ongoing risk management and loss prevention.

This volatility can be mirrored in the insurance industry. Another basic principle of insurance is that insurance premiums are pooled such that the losses of the few are paid for by the many. The premium income from mining companies is a tiny fraction of the worldwide global insurance premium across all industries, despite that fact that many of the largest companies in the world are engaged in the mining industry, but some of the largest insured, single, loss events in recent years have concerned mining companies. Mining insurance is characterised by a small number of very large loss events (as opposed to a large number of small losses) that in any one year can easily exceed the total premium for the sector.

"The mining boom in the middle part of the last decade was, on balance, not good for insurers"

Insurance conclusions

The mining boom in the middle part of the last decade was, on balance, not good for insurers. However it is fair to say that, from an insurer's point of view, the consequences were mostly predictable even if most failed to do so at the time.

A certain amount of luck is needed for any underwriter but good luck can only take you so far, and the insurance industry is no different to any other business in that if one offers too much coverage for too little premium income you *will* lose money. As most mine owners will know, operating at a loss for any length of time is unsustainable, and insurance is no different; an unprofitable underwriter is one who will, before too long, withdraw from providing capacity for mining risks.

In summary, the mining industry faces many challenges, both technical and commercial. In addition to the 'normal' risks associated with large industrial installations, it is an industry which involves the excavation of millions and billions of tonnes of earth and rock, often developing miles underground or removing entire mountains.

Furthermore there are the exposures relating to the remote locations that these mines are often found in, the absence of basic infrastructure and a local workforce, and the vagaries of working in jurisdictions unfriendly to mining companies. Finally, the volatility of the commodity markets continues to frustrate both miners and their insurers.

The implication is that only a specialist underwriter with the knowledge and understanding of the unique risks presented by the mining industry has the capability to sustainably provide the insurance coverage that mining companies require and with continuity of cover. Fortunately, there is a small, core group of insurers and reinsurers who have consistently participated in mining company risks and who have invested in making sure that they understand the industry and the risks that they present. It is this group that provide a certain level of stability within the market and ensure that there is some continuity and support available to mining companies.

International mining industry underwriters

IMIU is one of this core group of dedicated specialist insurers. It was formed in 1995 as a specialist underwriter of mining risks in direct response to a mining insurance market that was, yet again, in the midst of a mini crisis. A period of high losses had resulted in a shortage of available capacity within the insurance market and an analysis of the reasons behind this produced the inevitable conclusion that the only way to underwrite this class of business sustainably would be to apply some specialist skills to the process of assessing the risks and setting the most appropriate terms.

The market had previously applied a somewhat stereotypical view of the different types of mining risk; for example, underground mining is more hazardous than open-pit mining, coal mining is more hazardous that hard-rock mining and so on. Another classic mistake was the view that the larger the mining company, the better they managed their risks, and/or that miners in developed countries managed their risks better than those in developing countries. Whilst these views can be correct in certain specific instances, we also knew that enough exceptions existed to make such an approach both unreliable and often very unreasonable. Setting insurance terms on the basis of perceived generic hazard was evidently wrong and the true risk exposure was a combination of hazards and consequences presented at each location (both of which can change over time in type and magnitude at any single location).

> "Insurance cover that may be perfectly acceptable at one site may be uninsurable at another but distinguishing between the two requires a high level of technical expertise"

Since IMIU's formation, it has grown into one of the acknowledged leaders for this class of business. IMIU now underwrites exclusively for the International Insurance Company of Hannover (Inter Hannover) who are in turn wholly owned by the Hannover Re Group of Companies. Our philosophy from the very beginning was that we needed to know as much about the mining industry as the mining companies themselves; only with this knowledge could we possibly assess their risks and break the stereotypes.

Consequently, IMIU employ engineers from the mining industry all with considerable practical experience of managing mines and mineral processing plants of many different types throughout the world. Between them they have made over 1,500 separate visits to mine sites around the world over the last 18 years.

Over the years, we have learned that our ability to provide a good quality insurance product at an affordable price is strictly linked to having the best technical appreciation of the risks involved and the only way of doing that is to visit each site and understand the specific risk exposures of that operation.

Insurance cover that may be perfectly acceptable at one site may be uninsurable at another but distinguishing between the two requires a high level of technical expertise. This technical knowledge allows us to tailor an insurance product in direct response to the risk assessment rather than the traditional approach which was to give cover when the insurance market was soft and then take it away again as markets harden.

This approach has a proven track record of successfully insuring our clients' operations as many of our clients, with whom we have long standing relationships, can testify to.

Dividends of risk mitigation

There are many approaches to risk management and a number of means of mitigating risk to a level consistent with any individual mining company's appetite to retain risk.

Typically these means will fall under one of the following categories: risk avoidance, risk reduction, risk retention (there will always remain an element of retention), and risk transfer (including transfer to an insurance company).

Insurance should only ever act as the long stop (ie a last resort) when other means of eliminating or mitigating risk have been exhausted. Insurance is provided through means of a contract and thus there will be contractual terms that restrict or limit the coverage that is provided and additional conditions that may act to limit the actual indemnity payable by insurers.

"Insurance should only ever act as the long stop (i.e. a last resort) when other means of eliminating or mitigating risk have been exhausted"

Regardless of the level of indemnity provided through insurance, it will never fully recompense the insured for their financial loss, not to mention the additional costs associated with environmental damage, actions of local authorities, damage to a company's reputation, time spent on claims, loss of market share and share price, etc. There is also and typically a significant self-insured retention which will add to the uninsured portion of any large loss event that may be suffered by an insured.

The obvious advantage of good risk mitigation is that it will always benefit the insured long before it will be of benefit to insurers. This is partially because it may eliminate some of the direct financial consequences of a loss but additionally it will provide other benefits that may be harder to quantify; examples may include better health and safety practices, the avoidance of 'nuisance' losses, improved plant availability and steady state production.

This may all be very obvious to the vast majority of mining companies many of which have developed effective and sophisticated risk mitigation strategies that are continuously being improved.

Risk mitigation at the design stage

There have been numerous examples whereby IMIU have had the opportunity to become involved with mining operations that have recently been commissioned and entered the operational phase. In too many instances however, it soon became apparent that no design risk assessment was carried out by insurers since numerous opportunities for risk improvement were identified. Insurance risk engineers will assess a new mine development or expansion project with a critical eye and with quite often a different focus to a design engineer who may be concentrating on aspects of the project such as operations, access for maintenance, vehicle movements, supply constraints, and ultimately cost reduction.

The risk engineer will have the benefit of seeing first hand both the good and bad practices in many mining operations in different parts of the world and will be able to recommend pragmatic loss prevention recommendations. In the absence of such an assessment, the subsequent cost to retrofit these improvements will undoubtedly be significantly higher and take much longer (especially once the plant is running and the miners efforts are being focused on ramping up production). In many instances, it may not be possible to retro-fit, especially passive protection features, resulting in an operation with a higher than necessary risk profile.

> "Following the occurrence of several fires in SX plants there was an obvious concern amongst mine owners and their insurers about the lack of effective fire protection that exists in the layout of many of these plants"

Probably the most difficult and most expensive plants to retrofit with effective risk mitigation are SX (solvent extraction) plants. If the risk reduction features are not included in the original design then it is almost impossible to provide suitable levels of fire protection, particularly passive fire protection, which is always the most effective. Similarly, substations and associated transformers can have their risk exposure greatly diminished by appropriate design, and often at reduced cost if designed up front.

Following the occurrence of several fires in SX plants there was an obvious concern amongst mine owners and their insurers about the lack of effective fire protection that exists in the layout of many of these plants. When fires occurred they tended to be very destructive and hence destroy 100% of the productive capacity. Retrofitting effective fire protection in these older plants was almost impossible, was always a compromise, and could have been much better if risk engineering had been included in the original design. An excellent example of an SX plant with sound risk principles included in the design is at the Spence mine in Chile, where the mixer-settler trains have been arranged so that no more than 25% of the production capacity can be destroyed in a fire, and then only if the active fire protection that has been installed is ineffective.

Other examples of excellence include:

- The design of the picking of tramp steel and conveying of ore at the Ridgeway Mine in Australia where a combination of design decisions has resulted in a very low risk, and low operating cost means of conveying 8Mt/y of primary crushed ore up several hundred metres from underground; and
- The attention to a myriad of details in the design of drives and layout of the long downhill conveyor system at Minera Los Pelambres in Chile where 200,000t/d are transported downhill, generating 20MW of power while doing so.

Conversely, a major coal handling and preparation plant in Asia was constructed, without the intervention of a risk engineer, almost exclusively using combustible sandwich panels which significantly increased the risk profile to a level at which it was uninsurable. The use of expanded polystyrene from a cost and efficiency perspective was obvious but certainly not from a risk management view point. This would have been a simple issue to resolve had an engineer been involved at the design stage.

"Increasingly, mining companies are realising the benefit of involving engineers from the insurance industry, and in particular those that have specialist mining expertise, in the design phase of their projects"

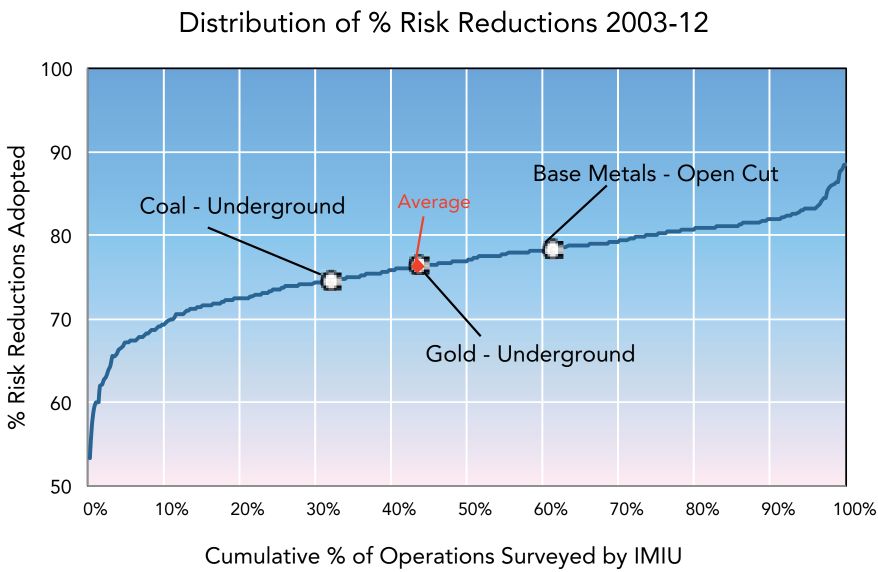
Increasingly, mining companies are realising the benefit of involving engineers from the insurance industry, and in particular those that have specialist mining expertise, in the design phase of their projects so that the opportunities are taken to include risk mitigation measures at an early stage and in so doing produce an operation will a much better risk profile.

Risk assessment

As discussed earlier, IMIU determined that the only way to effectively underwrite mining business was to thoroughly understand the miners' operations and in doing so, the engineers could provide feedback to the mining companies on the risks that were assessed, offer advice based on best practice witnessed through the course of visits to mining operations throughout the world, and to provide a benchmark against which all mines can be gauged.

To this end, IMIU developed a risk assessment tool called MinRAM (Mining Risk Assessment Model).

With IMIU providing insurance across the full range of mining and mineral processing operations it had to be able to make comparisons between the almost endless permutations presented by mining operations around the globe. To make these comparisons meaningful, the MinRAM was developed and it has now been used for almost two decades. It has proved to be very effective in making objec-



tive and meaningful comparisons between the risks presented at each site, all of which have their own unique set of geological, geographical, and mineralogical constraints and opportunities.

IMIU conducts a risk survey at virtually all of the operations that it insures and from these a MinRAM assessment is made. At the core of the MinRAM process is the division of the mining asset into operational functions, and the identification of the hazards that can be expected within them.

Also identified are the risk reduction measures that are available for mine managers to adopt to manage these hazards. Appropriate weightings are applied to the hazards and the risk reduction measures available from which the best and worst-case risk scenarios are developed.

A key part of the onsite risk survey conducted by the IMIU engineers is an assessment of the level of adoption of the risk reduction measures that are appropriate for all areas of that operation so that an overall assessment of the level of hazard reduction is made. This forms one of the key areas of measurement of the risks presented. It is in effect, an overall assessment of the level of risk that is

"At the core of the MinRAM process is the division of the mining asset into operational functions, and the identification of the hazards that can be expected within them"

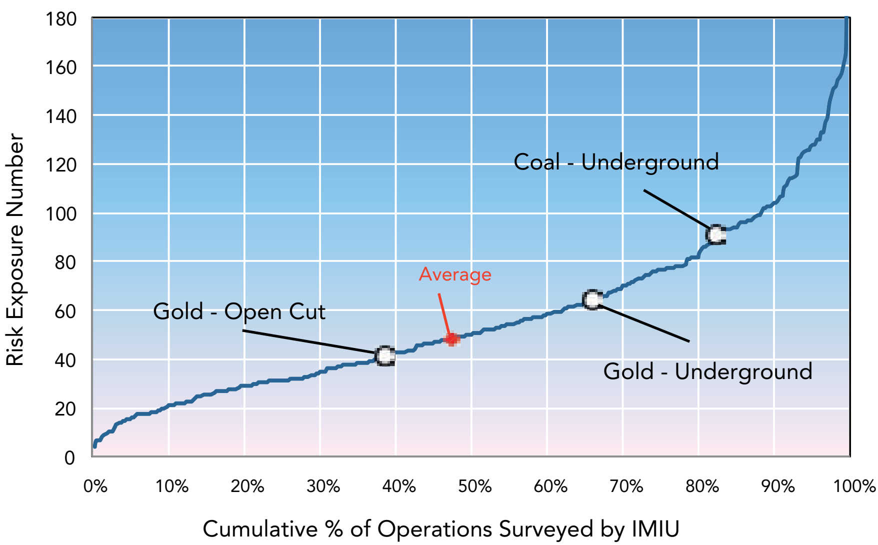
"A key part of the onsite risk survey conducted by the IMIU engineers is an assessment of the level of adoption of the risk reduction measures that are appropriate for all areas of that operation"

inherent in the operation, and the quality of the management of the risks. IMIU has conducted over 1,500 risk surveys and accompanying MinRAM analyses at almost 400 different mines throughout the world. The results from these surveys are summarised on p45.

As can be seen, there is a wide range of quality in the management of risks assessed using the MinRAM and the relative positions of mines and companies on this chart forms a major part of the perception in the mind of insurers of the attractiveness of the mine. The extent of the data obtained since 2003 also enables specific types of mines to be assessed relative to each other (eg underground coal and open pit base metals as shown on the chart)

The assessment of the management of the risks is combined in the MinRAM with an analysis of possible large loss events from each of the operational functions identified. This provides an indication of the relative commercial attractiveness of any one mining operation to potential (re)insurers. From the operations surveyed by IMIU a wide range of relative attractiveness was evident as can be seen as shown below.

Distribution of Risk Exposure Number 2003-12



Recommendations for risk reduction

Part of the traditional service that insurers provide to all large clients is advice on recommendations to reduce the risks that each operation presents. IMIU also provides this service to clients large and small following the risk surveys that we conduct at our clients' premises, usually annually.

Mining operations are complex and dynamic facilities and by their very nature the hazards associated with each will develop and change over time. Similarly, the likelihood and consequence of any potential hazard producing a loss will vary considerably from one operation to another. For this reason, a very proscriptive and rule-based approach to risk control is difficult to justify. Engineers who have worked extensively in the mining industry will be able to offer pragmatic advice for risk reduction which will benefit the client very much more than a strict adherence to the rules.

An issue that affects many of the investment decisions in mining companies is the life-of-mine and this is included in the deliberations when IMIU presents its recommendations. Another important issue, certainly for large mining companies, is the prioritisation of spending on risk reductions. Traditionally, this is done using a qualitative risk assessment that typically has a 5 by 5 likelihood vs severity matrix as the ranking tool.

"An issue that affects many of the investment decisions in mining companies is the life-of-mine and this is included in the deliberations when IMIU presents its recommend-ations"

The 5 by 5 matrix works, but tends to have a coarse ranking, and also does not include life-of-mine considerations. To overcome this conundrum IMIU has recently developed a ranking mechanism for recommendations known as MinRPIM (Mining Recommendation Priority Indicator Model) which can be used to determine the priority with which recommendations should be adopted. It is also a qualitative risk assessment tool, but in addition to including likelihood and consequence, it also includes life-of-mine.

This is an important consideration when large capital investment is required to implement recommendations; for example, it will not make practical sense for an operation with a life-of-mine less than five years to spend hundreds of thousands of dollars on a spare girth gear for a mill when the existing one is in good condition and the relative likelihood of a failure is extremely low, however, if the same operation has a life-of-mine in excess of 25 years, then the spare should be purchased.

For every recommendation there is a Recommendation Priority Indicator (RPI) which is single number providing a relative measure of the priority that the recommendation should receive when compared with the other recommendations prepared for that mining operation. This relative priority can be applied across an operation, a division, or an entire company. It also provides a tool by which the underwriters can be made aware of the very high priority recommendations at each operation and mining company for which some progress may be expected.

MinRPIM also provides a rational basis for excluding recommendations for which there is no economic case.

If it can happen it probably will

Even with the best advice and comprehensive risk management losses will occur, which is, after all, why insurance exists.

In case anyone is any doubt about the possibility of large loss events occurring, this major fire *(pictured)* cost its owners some US$400 million of which they were able to recover almost 50% from their insurers. Large loss events are always expensive for both the mining company and their insurers.

With the benefit of hindsight, risk engineering was at the heart of the re-design and reconstruction of this plant which had a number of inherent flaws. The cost of this engineering was considerably less than the residual plus-US$200 million that the company incurred. Choosing when to do the risk engineering can make a significant difference to your profitability.

"The volatility of both the mining industry and the insurance markets introduces challenges for the insurer that has historically resulted in periods of poor profitability"

Conclusion

It is evident that the mining business has a large number of unique challenges and risks to overcome and mining companies will naturally have a desire, more or less in specific instances, to transfer this risk to insurers. It is equally evident however, that not all risks are able to be transferred and there will always be an element of risk that the miner will have to retain.

The volatility of both the mining industry and the insurance markets introduces challenges for the insurer that has historically resulted in periods of poor profitability and hence difficulties in the provision of continuity of cover for mining companies. It has been shown though that with the proper technical assessment and specialist underwriting knowledge, a sustainable business model can be adopted to successfully insure mining business consistently.

It is hard to romanticise the mining industry which can be hard and dangerous. However, there remains something unequivocally adventurous about digging for treasure in exotic places around the world. This will appeal to some, not others.

Global mining risk and insurance market

Insurance might not be at the forefront of people's minds when thinking of mining business but, as in every major industrial undertaking, it is a key consideration in providing financial security. The provision of risk assessment, risk mitigation and risk transfer services by insurance companies to insurance partners is by now a known process. Primary insurers will support mining companies in various ways, eg:

- Providing early support through risk assessments conducted by specialist mining risk engineers, highlighting key exposures as well as recommendations for improvement.
- Supplying insurance capacity based on client's needs and internal risk appetite.
- As lead insurer, setting the terms and conditions for placement which the rest of the market will follow through co-insurance or syndication.
- Issuing insurance policies (licensed paper) and carrying out administrative tasks (premium collection and the like), although this can be circumvented by using local fronting companies who retain little to none of the risk.
- Organising professional loss adjustment services in case of a loss and administering the claims payment process.
- When a captive insurer is involved, serving contractually as a reinsurer.

"Primary insurers will support mining companies in various ways"

However, the decision to get involved in the first place as an insurance capacity provider, involves a rigorous underwriting process in which underwriters must evaluate the risks to which they will get exposed and decide on the terms and conditions that will be needed in order to accept the risks.

Among the standard mining exposures such as fire and explosion risks, underground collapses, machinery breakdowns, natural catastrophes etc, this article will focus on more recent emerging trends and exposures which currently drive the discussion in the insurance market for this particular and difficult class of business.

Overview of the mining market

Mining is a risky business. The global insurance market paid approximately US$4-6 billion to the mining sector for claims arising from property damages and business interruption (manmade and natural catastrophe) over the last 10 years. Many of these claims have shown that the complexity of the business necessitates a dedicated policy wording for the mining industry. As a result, a group of stakeholders (buyers, brokers, service providers and insurers) are working on an industry-specific policy wording and claims protocol. This initiative aims to improve the wording clarity and thereby increasing the speed of claims settlement. The question also arises as to whether insurance models, and the manner in which risk is shared between insured and insurer, have kept pace with changes in mining.

Mining is different

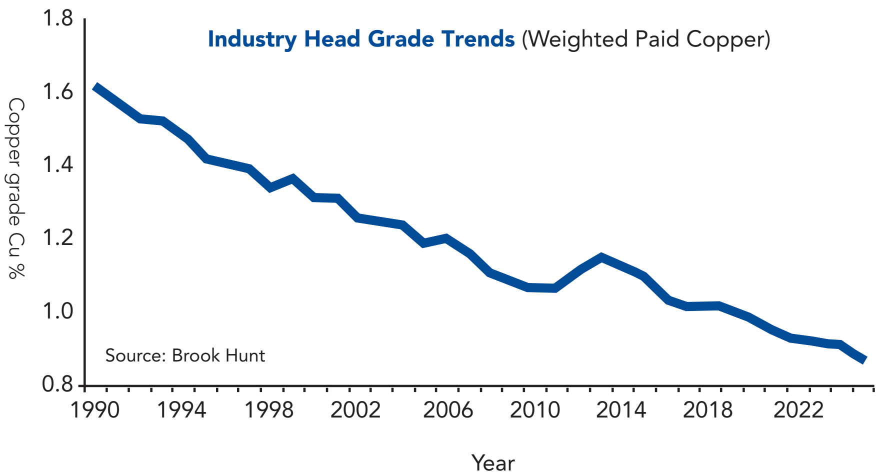
There are obvious challenges facing the underwriter which contribute to volatility in the mining portfolio. Consider, for example, the sheer breadth of loss exposures, especially when coverage is written on an "all risks" basis. In this respect, insuring a mine contrasts significantly with a typical factory or industrial plant. The latter has a well-defined building footprint and contents, and its construction materials behave in a predictable fashion.

A mine, on the other hand, has a footprint that grows with time. It operates like a permanent construction site which never stands still. There are also problems with defining the property, eg, permanent works underground, permanent roadways in open pits, pit walls, tailings dams, unpredictable behaviour of rock materials, the combustible nature of coal mines and the vulnerability of open pits to flooding. Location is another distinctive factor. Many surface operations are at altitudes of 4,000m above sea level, while miners in South Africa are extracting ores 3,000m below the surface. Mines are frequently located in areas with extremes of heat, cold and rainfall.

Scale of operations and less redundancy

The average grade in most hard-rock mines has decreased steadily and continuously over the past 20 years, as in the case of copper (see below).

This means that, in order to be economical, mine processing has taken on a different scale of operations and redundancy has decreased. In the search for greater efficiency, the industry has increasingly turned to larger equipment and



machinery. From an insurance point of view, this can potentially lead to critical bottleneck situations where an interruption can be huge in financial terms, up to US$10 million per day for some of the largest mining operations. An increased scale of operations means inevitably larger production losses and longer periods of interruption in the event of physical damage due to longer lead times to replace large-scale equipment.

Business interruption volatility

Until about a year ago, commodity prices were moving in one direction only – upwards. Demand for commodities had pushed prices to all-time highs and the values declared at the beginning of the policy period often were outdated 12 months later. This has certainly changed in the past year but the fact remains that a relatively small damage to property could result in a significant loss of revenue and business interruption loss.

Business interruption claims which effectively means lost profit plus standing charges are driving insurers' profitability in this segment. This fact likely applies more so to the mining industry than any other industry within the commercial insurance segment.

Port and infrastructure accumulations

Certain minerals are geographically concentrated, leading to major regional accumulations of mining activities. Examples are the iron-ore-rich Pilbara region of Western Australia, the abundant copper deposits of northern Chile, the Bushveld Complex in South Africa with some 80% of the world's platinum group metals (PGMs) and the vast coal reserves of southern Queensland. Combine this concentration of activity with a vulnerable energy-supply or finished product transportation corridor, and the result is a significant increase in accumulation risk. The infrastructure exposure is particularly accentuated with bulk commodities such as coal and iron ore, which need to be transported in large quantities.

> "An increased scale of operations means inevitably larger production losses"

To a lesser degree, this also applies to copper-gold concentrate, which can face similar challenges. Not only is power a large contribution to the cost base of a mining company but also a key risk for insurers if the supply of the power (gas, electricity or water) is covered by means of suppliers or service interruption extensions.

No discussion of accumulation risks would be complete without some mention of natural catastrophes: cyclone activity off northwest Australia; flooding in eastern Australia and South Africa; earthquakes in Chile, Peru, and Indonesia. These all lead to major threat scenarios for the insurance industry and require accurate pricing of the nat cat risk and careful allocation of limited capacity for these scenarios.

Political risk

Political risk can be manifested in various forms, from outright confiscation, contract frustration to defaulting on payments. In the world of property insurance, the biggest risks are in relation to strike, riot and civil commotion, where a relatively small group of disgruntled people can cause a major business interruption. Mining companies' exposure varies greatly depending on the location of its operations. Underwriters have recently started to assess this exposure in more detail.

Ageing facilities

Another "emerging" risk in the mining sector is what we would classify as ageing assets. There are many mining operations which have now been in use for over 100 years. Of course, plant and equipment can be replaced and maintained but what we refer to specifically here is the increasing depth of open-pit mines and the potential impact on pit wall stability, the areal extent of underground operations and impact on subsidence and long-term impact on groundwater resources. For example, in order to maximise the output and extend the life of mine, open-pit mines are getting wider, longer and deeper. The importance of understanding the exposure is critical as pit wall failures cannot only lead to tragic fatalities but also to serious production losses for extended periods. Over the years, mining companies have installed ever-improving monitoring systems. The precision and long-range capabilities provide them with early warnings to evacuate personnel and mobile equipment. However, they do not prevent unstable pit walls from failing.

> "To maximise output, open-pit mines are getting wider… and deeper"

Sustainability issues

Mining operations inevitably impact on the local environment and society. Most companies are aware of this challenge and manage it appropriately. However, some companies do neglect their corporate responsibility, which can lead to criticism from locally affected people or society at large, including from non-governmental organisations. If such criticism grows to the extent that mining companies' trading partners are also affected, it requires particular attention from insurance companies.

Conclusion

The mining industry continues to evolve. It is a challenge for mining underwriters to keep up-to-speed on technological changes as well as potential shift in exposures resulting from the trends discussed above. The insurance market will have to continue to strive for balanced risk-sharing in order to achieve sustainable results. Not all of these risks will be entirely transferrable to insurance markets. However, a sound risk management approach and close collaboration and open communication between the mining industry and its insurance partners will ensure that the partnership can be both profitable and sustainable for both sides.

Holman Fenwick Willan

Holman Fenwick Willan is an international law firm advising on all matters connected with the international mining industry. HFW acts for mining companies, investment banks, traders, power generators, insurers (including captives), shipowners and charterers. Its lawyers provide advice and support on the full range of issues its clients face in this sector, including risk management, insurance and reinsurance, projects, joint ventures, M&A, capital markets, service engagement, regulation, dispute resolution, corporate governance, logistics and political risks.

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Patrick formed IMIU in 1995 and has been its Managing Director since then. He has been underwriting continuously for the last 37 years and has devoted a very considerable part of his career to specialising in mining industry risks. He is recognised by world markets as a leading underwriter for this class of business. Prior to starting IMIU, Patrick underwrote for one of the largest managing agencies at Lloyds.

Brenton Smith, Director of Risk Engineering

Brenton has been involved with IMIU since the start and has developed many of the risk engineering tools used by IMIU's engineering team today when they visit IMIU clients' mining operations around the world. He worked in the mining industry for over 24 years and, prior to joining IMIU, was Chief Engineer for one of Australia's largest gold mines.

Jason Rollins, Underwriter

Jason started his IMIU career in September 2011 as an Underwriter. He has over 12 years' experience in the insurance industry, 11 of which have been in the London market. His insurance background includes positions in retail broking, wholesale broking, private equity consulting, and underwriting. He has worked predominantly with heavy industrial and mining risks. His role prior to joining IMIU was the head underwriter of his previous employer's Mining & Minerals Department.

James Fryer, Underwriter

James joined IMIU in September 2011 as an Underwriter specialising in contract works for mining projects worldwide. James has worked within the London insurance market since 2001, with roles including underwriting, risk engineering, and loss adjusting. For the last few years, he has worked virtually exclusively in the mining sector. He is a chartered chemical engineer and worked in the contracting and manufacturing industries before moving into insurance.

JLT

JLT is one of the world's largest providers of insurance, reinsurance and employee benefits-related advice, brokerage and associated services. JLT's client proposition is built upon its deep specialist knowledge, client advocacy, tailored advice and service excellence. Together, JLT places its clients first, champions independent thinking and expects to be judged on the results it delivers.

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The merger combined Lloyd Thompson's specialist skills in the London Market with Jardine Insurance Broker's international network, which included a significant presence in the Asia-Pacific region.

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He has 23 years of experience in the insurance industry, joining Swiss Re in 1990 in the natural catastrophe research group before becoming an underwriter in 1995. Prior to this, he worked as a consulting geotechnical engineer in Canada, the USA and Australia. He holds a 1st Class Honours degree in Civil Engineering from Queens University Belfast and a Masters degree in Geotechnical Engineering from Purdue University in the US.

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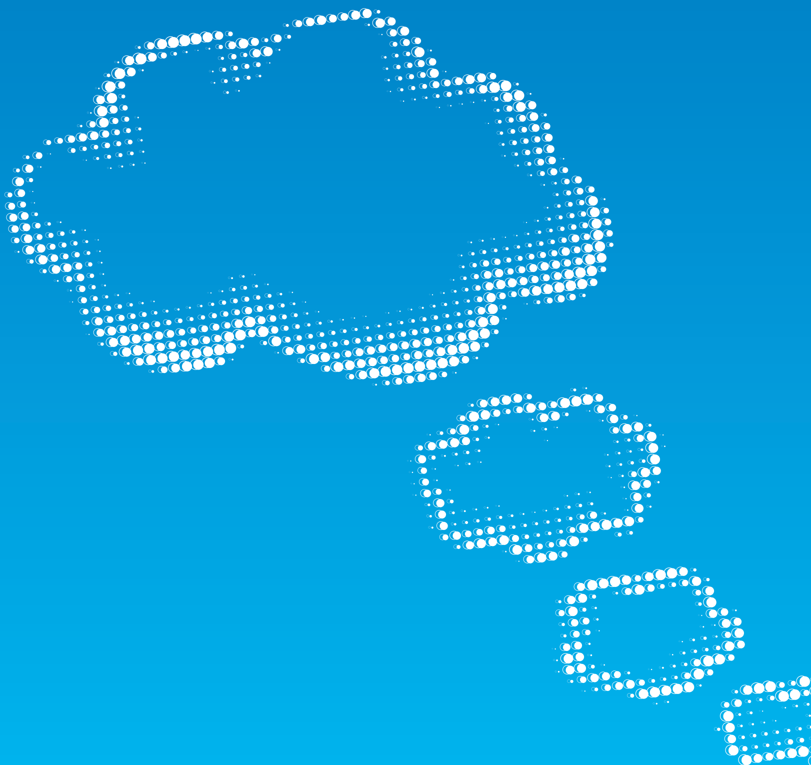

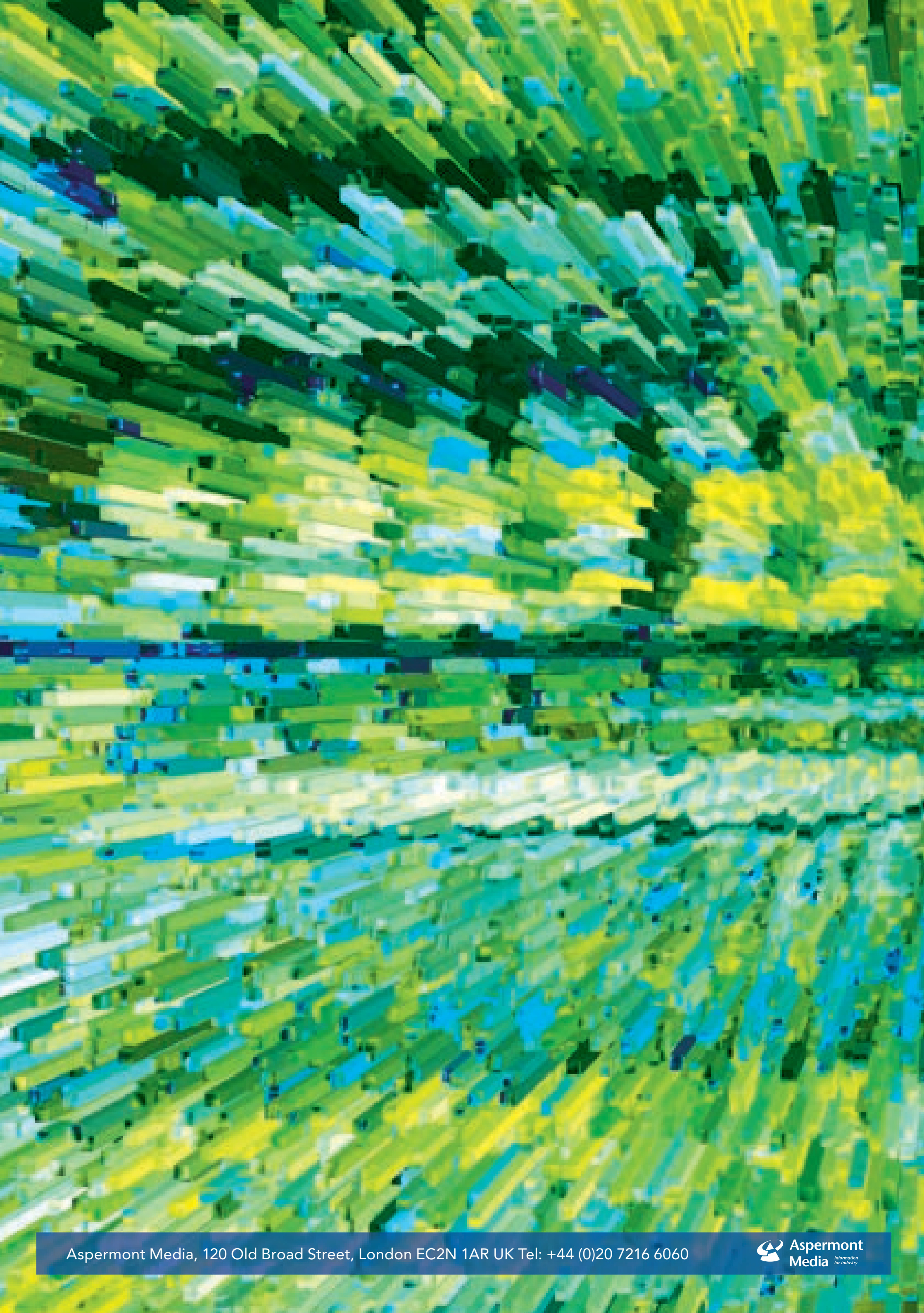

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