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cutting through complexity

KPMG GLOBAL MINING INSTITUTE

Mining risk and assurance

A survival strategy

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Compliance Series

Contents

Introduction

Faced with falling margins and major project failures, several of the world's top mining companies have parted company with their Chief Executive Officers (CEOs) and other senior figures in the past couple of years.

The marketplace has been unforgiving, with falling commodity demand and prices and a continued escalation of input costs. Risk management is also under the microscope, as major capital projects grind to a halt and injuries and fatalities continue to make the headlines. Corporate success is further threatened by the potential for labor unrest, political uncertainty and ever-changing regulations.

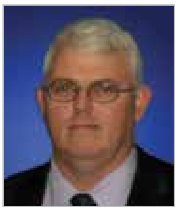
In a bid to protect – and in some cases salvage – their immediate positions, organizations have embarked on a spree of business re-engineering and cost optimization initiatives.

But this is not enough. Shareholders, Boards and CEOs need greater confidence in their strategic choices, and increased assurance against business threats and compliance obligations. The industry has invested substantially in controls to prevent and detect risk, but there is more work to be done in order to make risk a part of everyone's daily job.

This paper identifies eight key drivers of value from strategy through to sustainability and examines the risks inherent in each of these areas. If mining businesses are to safeguard this value, they need to adopt an integrated risk and assurance strategy that provides cost-efficient coverage – where it is most needed.

Such an approach harnesses the Board sub-committees as a fourth line of defense, allocates clear responsibility for oversight, and protects the interests of C-Suite executives, the Board and all key stakeholders.

This holistic, 'survival strategy' assists the organization in reducing the chance of failure by providing appropriate assurance to shareholders and other key stakeholders. Organizations will then become masters, rather than victims, of risk.

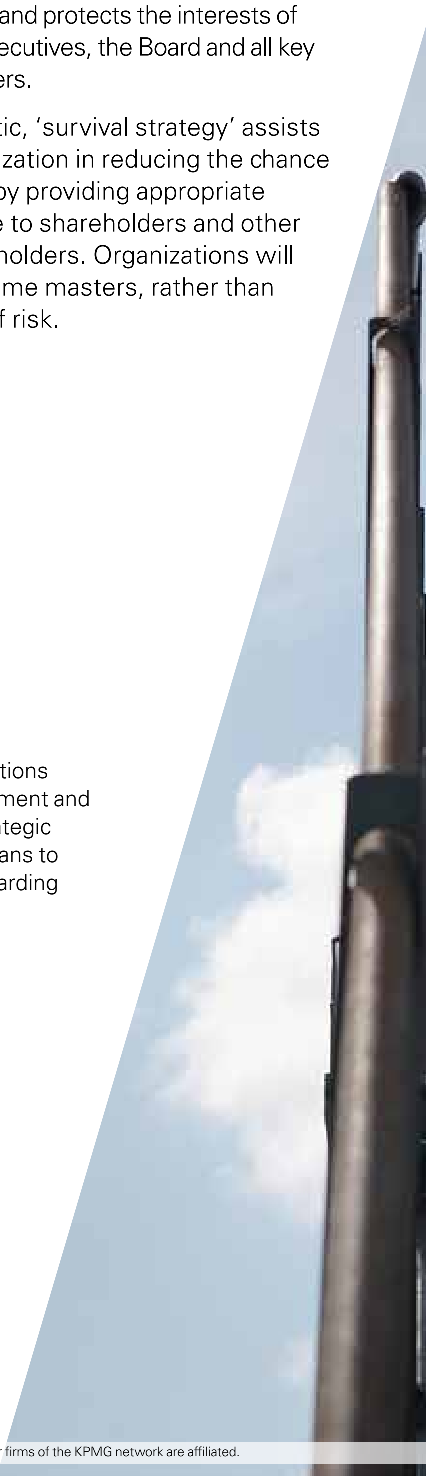


Dane Ashe
Global Mining Leader –
Internal Assurance
KPMG in South Africa

With 27 years of audit experience (22 in internal audit), **Dane Ashe** has worked in in-house internal audit functions within the steel, forestry and mining sectors. His passion for corporate governance, Enterprise Risk Management and operational internal audit in the mining sector translates to value-added services on a full outsourced and strategic co-sourced basis. A key focus area for Dane is implementing effective integrated assurance strategies and plans to facilitate directors and executives in better demonstrating the execution of their fiduciary responsibilities regarding sound governance requirements.

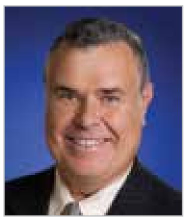
Wayne Jansen
Global Head of Mining

KPMG's Global Head of Mining, **Wayne Jansen**, has 24 years of audit and advisory experience across a broad range of clients. Specializing in the Energy and Natural Resources industry, he has extensive experience in risk management, has led large multi-national external audits, assisted companies in improving financial processes and internal control environments and provided internal audit assurance, as well as development of strategy, strategic business plans and organizational design. Wayne has also led a multitude of transactions and restructurings projects and formed global support teams on numerous cross border transactions, in addition to leading post-deal integration teams.



Strategy: gaining long-term advantage

As mining companies plan for a more confident, yet still volatile economic environment, value should take priority over volume. By integrating sound risk and assurance practices into strategy, internal and external stakeholders gain greater confidence that the company can sustain its performance.



David Waldron
Partner, Global Mining
Leader – Strategy
KPMG in Canada

A Natural Resources Economist, **David Waldron** has 25 years of experience which includes applying strategic, operating and market analysis techniques to business decisions, including structuring organizations for success through the support of capital investment decisions to preparing and implementing merger and acquisition strategies.

Mining executives are no strangers to turbulent times, but the recent instability in global commodity markets has had a profound impact, with a prolonged period of declining or stagnant demand and prices for most major products.

The reaction has been a series of cost-cutting measures. Operations, once running flat out, have been scaled back. Any cash generated from operations is being diverted from growth and channeled to long overdue maintenance projects. Companies have suspended major capital projects, and maintained them with just enough investment to keep options and rights open. Finally, merger and acquisition activity is down by around a third – not due to a lack of sellers, but because cautious buyers are waiting for either a further fall in prices or a return in shareholder confidence.

In a fragile recovery phase, growth is slower than before, with a continued uncertainty over prices. Consequently, management strategies are focused more on delivering value than volume, in an effort to build confidence with investors. Strategies also vary according to the size and maturity of a company.

Shareholders and managers cannot rely on rising prices to subsidize the learning curve of junior mining companies, so these organizations are concentrating on early stage operational excellence, in order to become profitable – as quickly as possible.

Intermediates also place a high priority on operations, as they strive to shift existing properties from rapid expansion to steady state mode, to remain cost efficient. In a bid to boost investor confidence, these firms are trimming long-term development assets, to simplify their portfolios and achieve an appropriate balance between commodity focus and diversification.

Given their breadth of activities, the major mining companies have the widest scope for orienting their operations towards value. With investment capital scarce, executives may have to take some tough decisions on whether to discontinue or at least reduce the scope of large projects that have lain protected in the pipelines. Transport, power and associated infrastructure are being spun off projects, to be developed off the books through public and private partnerships. The market may be skeptical of the value of any potential acquisitions, so majors are more likely to be selling assets, to rebuild investor confidence through improved operational performance.

Given the rational approach of intermediates and majors toward properties and developments, there are a number of interesting deals on the horizon. Buyers are starting to unlock their war chests in pursuit of bargains, but will be far more selective than before, to ensure that any acquisition is a good fit with their existing operations.

Managing risk and assuring stakeholders

With a focus on value to build investor confidence, Boards and CEOs need to be confident that their chosen strategy is sustainable and that the organization is well-positioned to manage the associated risks. This requires good governance, incorporating sound risk and assurance processes, legal and regulatory compliance and effective stakeholder management.

Governance

Today's investors no longer write a 'blank check' and take a far greater interest in how their capital is being employed. By involving the Board in strategy discussions from an early stage, and communicating the rationale behind major decisions, senior management can ensure that shareholders are aware of, and comfortable with, the risks being taken, and will not be surprised by subsequent decisions over the lifetime of a project.

“Given the rational approach of intermediates and majors toward properties and developments, there are a number of interesting deals on the horizon.”

To practice good governance, shareholders and Boards should be kept fully aware of the corporate strategy – and of any subsequent deviations. For example, investors that initially signed up to a series of gold mining projects may be alarmed to discover that the business has moved heavily into copper, fearing that such a move brings greater risks. Similar concerns exist over activities that could be subject to 'resource nationalism,' where governments seize assets or levy additional taxes.

Many leading companies have a compliance oversight committee that looks closely into the implications of different strategic options, and takes a constant barometer of regulatory conditions and stakeholder concerns.

Regulatory compliance

Given the huge potential impact of any compliance breaches, legal and regulatory obligations cannot be an afterthought. By building these issues into the core strategy and planning process, leadership can identify all the risks and gain a truer picture of the costs of major decisions.

Failure to comply with tax and other regulatory demands can have severe consequences, leading to fines, cessation of activities, seizure of assets and, in some cases, jail sentences for executives. Companies need assurance that, in implementing strategy, neither the owners, shareholders, nor the executives are at risk of non-compliance.

For example, governments have the right to stop projects and operations for various reasons that run from environmental compliance to permitting requirements. In 2013, a number of mining organizations had to account for government actions in their strategies and mine development projects.

Stakeholder compliance

The 'social license to operate' is an increasingly important part of strategy, as stakeholders such as local communities or environmental activists recognize that they hold the power to shape, delay or even prevent projects. Strategy should take account of the perspectives of the different groups who will be touched by the miner's operations.

Stakeholder management does not mean acquiescence. A mining company is a commercial operation. Management cannot guarantee that all stakeholders will rally to their project and they certainly will not be able to agree to every demand. By mapping stakeholder needs and potential reactions, leaders can assess and monitor the risks of a particular strategy or decision. These risks should be communicated to the Board to assure investors are aware of their exposure and how it is evolving. Stakeholder mapping can help with the necessary dialogue mining companies have with regulatory authorities. As both corporate strategies and regulatory environments evolve, blind spots can emerge. To keep well informed and ahead of potential compliance issues, executives need to understand the motivations and actions of stakeholders and regulators.

Covering all the bases

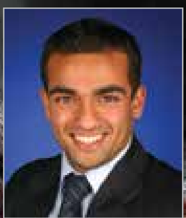
Formal and informal compliance requirements can change rapidly, and mining executives have to keep abreast of these evolving commitments. With money tight, corporate strategy must aim to build sustainable results and raise investor confidence, and not allow compliance issues to hold back progress. KPMG's member firm professionals can help create a compliance-aware strategy that protects the organization from regulatory and competitive change, to avoid surprises.

> “Understanding stakeholders and regulators will keep executives well-informed – in advance of potential compliance issues.”

Key strategy issues

1. Managing the risks of changes in strategy: moving from growth and expansion to shareholder value.
2. Making management accountable to Boards for quality, risk and assurance disclosures.
3. Aligning strategy with regulatory requirements and obligations.
4. Managing stakeholder engagement through evolving regulations and project obligations.

Sustainability: not just a cost, but a source of value



Rohitesh Dhawan
Global Mining Leader – Climate Change & Sustainability
KPMG in South Africa

Rohitesh Dhawan is a Natural Resources Economist with extensive mining sector experience in various aspects of sustainability including: social license to operate, climate change, environmental resource management and stakeholder engagement. Sustainability experience in other sectors includes: steel, cement, financial services and infrastructure. Rohitesh achieved an MSc in Environmental Change & Management from the University of Oxford and also serves on the National Business Initiative's Advisory Committee on Climate Change.

Businesses cannot succeed in societies that fail, and there is a strong commercial rationale behind investment in the workforce, the community and the wider environment.

Although mining companies are aware of the main sustainability 'megaforces' – such as climate change, scarcity of energy, water and natural resources and environmental decline – they have struggled to truly quantify their impact. Consequently, these issues have not become a core part of corporate strategy, with organizations often reacting to issues when they occur, rather than consciously hedging against future risks and preparing for opportunities.

With the possible exception of carbon taxes, most megaforces have so far, had little or no direct cost to businesses, but this is about to change dramatically. Where charges for external impacts of mining operations (what economists term 'externalities') already exist, they are set to rise further, as is the case with carbon. Where there are no current charges, such as for degradation of ecosystems, new ones may be introduced. Together, these costs form part of a growing need for companies to account for the 'true value' of their operations beyond wages, labor, equipment, energy and services.

Without accurate forecasts, many mining operators could find themselves facing significant, unforeseen expenses or, worse still, see entire mines unable to function due to a loss of their social license to operate. However, if managed appropriately, these megaforces could provide unprecedented opportunities for growth, through new business models, cost savings opportunities and preferred access to stakeholder capital.

A safe and healthy workforce

The fallout from a serious safety incident can be huge, in terms of the personal tragedies resulting from fatalities or injuries, financial cost of legal claims and non-compliance penalties, and the potential damage to reputation that can wipe billions of dollars off the shareholder value. Although safety standards have improved considerably in recent years, most data is historic, and does not project the future risk of issues such as asbestos exposure or heat stress caused by rising underground temperatures.

Retrospective action can also deliver nasty surprises. In South Africa, workers suffering from asbestos poisoning have filed an enormous law suit against certain mines. Yet, at the time, these incidents happened several decades ago, when mines had no legal obligation to protect against asbestos.

Community health is another major priority. Mines are typically the prime employer – in many cases, the only employer in their region – and have a duty to nurture a healthy community. From a pure business perspective, a local workforce suffering from conditions such as AIDS, tuberculosis, and malaria is also less productive, with the added threat of legal and regulatory action for low standards of healthcare.

Senior executives, and the social and ethics committee, need to define these and other important indicators of safety and attempt to create an incident-free culture.

Environmentally responsible operations

Mining companies are accustomed to a minimal financial outlay for activities that negatively impact the environment. However, taxes and penalties for air pollution and carbon emissions are becoming more widespread, and will inevitably extend to cover waste discharge, as well as the use of scarce natural resources. Open cast mines in particular use vast amounts of water, yet have not had to pay the true price, which will almost certainly rise significantly.

A long-term outlook can influence decision-making. For example, over a 20-to-30-year period, an investment in renewable energy may make business sense, given the projected rise in traditional fossil fuel prices.

Former mining sites are now routinely expected to be restored to their former level of biodiversity, which will also incur substantial charges in future. Several mining firms take this responsibility very seriously, by extracting samples of vegetation and animal life from the area to be mined, which is preserved in a nursery, to enable the environment to be recreated once the mine ceases to operate.

Forecasts should include the risk of unexpected retrospective charges that may be applied years after a mine has closed; for example, for damage resulting from acid water drainage.

Organizations are being asked to measure and report upon an ever-increasing set of environmental indicators, to inform regulators, investors, non-governmental environmental groups and the media. Any future profit projections, therefore, need to factor in the security of supply of resources and the environmental impact and cost of activities. To acquire the relevant data, managers have to systematically monitor and measure energy and water usage, emissions and discharges.

Social license to operate

Mining companies' legal and moral obligations are merging, and to gain a social license to operate, they have to comply with the spirit rather than the mere letter of the law. At a bare minimum, the development of schools, accommodation, hospitals, clinics and other community facilities should be viewed as an essential part of doing business. More enlightened operators see these factors not as obligations, but as the 'social compact' binding the fortunes of the mine with those of the community. Failure to satisfy expectations can lead to unrest and could ultimately prevent the mine from working effectively, as workers and communities may cease to cooperate.

Businesses cannot succeed in societies that fail, and stakeholder trust is the key to maintaining permission to operate, to develop a shared vision of the future that brings social progress and economic opportunity. Of course, the demands from communities and governments can rise to a point where it is simply not commercially viable to accede. The more excessive requests may reflect deeper, unresolved societal issues, including poor government services. Even in such difficult situations, mining companies can better secure their futures by adopting a long-term view, helping all stakeholders to engage constructively, while also fulfilling their immediate needs.

Towards an integrated sustainability strategy

KPMG's member firm professionals have a deep understanding of the environmental forces facing today's mining businesses and can help quantify their impact. We work with member firm clients to integrate sustainability into their core strategies, in order to build a social license to operate that delivers shareholder value and provides benefits to all stakeholders. Our teams use well-proven methods and a number of tools for measuring and tracking the strength of relationships and calculating the return on investment in communities and the environment.

Key sustainability issues

1. Securing and maintaining a social license to operate.
2. Managing stakeholder relationships and meeting multiple demands.
3. Moving from mere compliance – to creating value from environmental regulations.
4. Building resilience to changing environmental conditions.
5. Driving a culture of safe operations and zero harm.

Quality growth through major projects: laying a smooth path to success

Travis McAuliffe
Partner, Major Projects Advisory
KPMG in Australia

Travis McAuliffe has extensive risk and assurance experience in the mining sector across iron ore, gold, mineral sands, diamonds, and coal, as well as the Oil and Gas sector (Liquefied Natural Gas). His experience includes complex engagements that have focused on major capital project delivery and cost control, including a focus on unsubstantiated or inflated costs.

Through careful planning and tight monitoring, mining companies have a far better chance of avoiding excessive risks and failed projects. Processes and controls alone are not sufficient, and leaders should also foster a risk-aware culture.

Although the mining industry has invested heavily in improving its risk management over the past decade, this has not prevented the continued occurrence of large-scale project failures. As an indication of the scale of the problem across all sectors, 77 percent of the engineering and construction executives responding to KPMG's 2013 Global Construction Survey,[1] report underperforming projects.

The consequences of a major budget or schedule overrun can be severe, and in the worst case, could even threaten the future of the business. If mining companies are to avoid such events in future, they need to be confident that they have a reliable way of anticipating and dealing with risks.

There are a number of causes of project failure, including poor or incomplete estimating, inadequate scope, lack of alignment between budgeting and planning, and design errors and omissions. Subcontractor underperformance is typically down to over-optimistic bidding, resource shortages, unfavorable contracts and an overly aggressive schedule.

Any of these factors may be exacerbated by weak project management and risk management, where the main project risks are not fully understood and problems are not picked up at an early stage due to lack of monitoring and reporting. And it is not getting any easier, with mining projects becoming more complex, requiring new and innovative construction techniques, and often based in remote regions such as West Africa and Mongolia.

[1] *Ready for the next big wave?* KPMG Global Construction Survey, 2013.

"A standard budgeting process ensures that all expenditures are subject to a consistent level of scrutiny, and makes it easier to monitor spending."

Creating a more reliable approach to projects

An effective project management controls framework enables frequent monitoring of the main risk indicators – in particular, delays and cost overruns – and spots any unfavorable trends early enough to respond. Periodic project reviews can assess that staff are complying with policies and procedures and ensure that suppliers are adhering to the contract terms. This should create a flow of reliable information to the individuals and committees that oversee the project, with five main areas of focus:

1. Strategy, organization and administration

Projects should have a clear strategy, with a formal approval process prior to entering into contracts and committing company funds. Policies and procedures for all associated processes need to be regularly reviewed and updated, with the right people put in place, with defined roles and responsibilities.

2. Cost management

A standard budgeting process ensures that all expenditures are subject to a consistent level of scrutiny, and makes it easier to monitor spending. Similarly, formalized reviews of payments and approvals help to control costs throughout the project, with all authorizations documented.

3. Procurement management

A single, organization-wide sourcing process fosters strong business relationships with reputable firms and encourages a reputation for fairness. Contracts can be open to radically differing interpretations, and a standard contract template – created with the help of legal specialists – avoids ambiguity, with common, clear language.

4. Project controls and risk management

Mining projects change constantly, and owners need a formal, documented process for agreeing and approving any variations. A robust risk management framework does not just consider immediate project risks, but also encompasses wider business, regulatory and political risks, such as resource nationalism or environmental opposition. Many mining companies have multiple regions and business units and need to aggregate all the various risks to gain a top-level view.

5. Schedule management

By agreeing on schedule development standards, project managers can take a broad view of every major activity, compare the progress of different projects, and make informed decisions on schedule changes caused by factors such as weather, materials delivery, staff availability and budget limitations.

Despite the best efforts, problems can occur, so organizations should be prepared to take urgent action, including more frequent status reporting, closer observation of contractors in the field and a detailed study of supplier performance against contract. When contemplating any remedies, it is wise to seek legal advice.

Ultimately, controls are only as good as the people that use them, and every effort should be made to establish a risk-aware culture, with risk performance integrated into appraisals and incentives.

Gaining greater comfort

KPMG's program and project management and audit professionals work with some of the world's biggest names in global mining. Calling on KPMG's extensive industry experience, our member firms are able to scrutinize their clients' internal processes and controls and help create a culture where everyone recognizes the responsibility to monitor and report accurate information on time, to enable prompt and appropriate decision making.

Our member firm clients gain a better understanding of the risks facing their projects – and the subsequent impact upon timeline and costs – and can create robust plans for dealing with incidents, to minimize delays and keep within budget.

Key causes of project failure

1 **Scoping issues** – Project scope does not fully address organizational business requirements.

2. **Inexperienced or unqualified project team** – Project team lacks appropriate skills and expertise to manage the project.

3. **Poor estimating** – Project estimates are incomplete or insufficiently detailed for budgeting.

4. **Lack of integrated budgeting & planning** – Project business requirements are not aligned with budget and execution plan.

5. **Incomplete & fluid design** – Construction commences based on an incomplete design and project scope is continually in flux.

6. **Lack of proactive risk management** – Project risks are not fully understood or vetted prior to project approval.

7. **Unrealistic schedules** – Project delays during planning and approval result in compressed schedule milestones and unrealistic completion targets set by management.

8. **Insufficient tools & project management infrastructure** – Projects tools and infrastructure are not set up to effctively plan, deliver, track and report performance.

Source: KPMG: *Avoiding Major Project Failure – Turning Black Swans into White*, 2013

Operational excellence and profitability: aligning strategy, assets and people

Hiran Bhadra
Global Mining Leader – Operational Excellence
KPMG in the US

As Global Mining Leader for operational excellence solutions, **Hiran Bhadra** has extensive experience in planning and implementation of performance improvement and transformation initiatives in energy and natural resources companies in the US, Africa, Australia and Latin America.

To maintain high productivity in increasingly difficult and dangerous environments, mining companies need people and equipment that can cope with the strain. Technical knowledge and influence should be elevated, to maximize utilization of assets and meet agreed production targets in a sustainable manner.

In their quest to extract ever-larger volumes, many mining companies have put enormous pressure on their capital equipment and geological assets, which have consequently experienced excessive wear and tear. This 'sweating of assets' means that mining equipment (drills, dozers, motor-graders, dumper trucks, shovels, excavators, water sprinklers, mobile cranes, mobile light towers, explosive vans, mobile crushers and weighbridges) needs constant repair and maintenance to remain productive and avoid accidents.

High-level, engineering skills are required to keep this equipment running, yet the demand for such resources coincides with the departure through retirement of an ageing workforce. The newer, younger recruits do not possess sufficient understanding, experience or judgment to bring assets back into use quickly, or to predict future technical problems. This leaves mines with a significant knowledge gap that could impair its ability to achieve planned output quotas.

The traditional, production-driven culture has also reduced the influence of the technical services function responsible for getting the most out of geology and capital equipment. In some cases, technical services are actually part of the wider production team, and therefore, lack an independent perspective to challenge decisions at the executive committee level. In such an environment, where output is everything, the longer-term management of assets takes second place, which could make the mine vulnerable to shutdowns, failures and safety incidents.

Digging deeper

Having extracted much of the more accessible commodities such as gold, nickel, platinum and iron ore, mining firms now have to dig deeper into areas of higher geological complexity, with a greater risk of accidents. If they are to maintain productivity rates, they need to provide additional support to critical staff such as long drill and equipment operators.

Communications technology can help workers stay in touch with operations teams and also report any concerns promptly. However, unions may be concerned that hand-held devices could be used to monitor people's movements, and could be opposed on grounds of privacy.

Many workforces have not received sufficient technical and health and safety training to work in these more difficult conditions, yet they are expected to be proficient. This skills gap can lead to dissatisfaction and, potentially, to industrial action.

Deeper, more complex mines also call for greater mechanization for extracting or handling materials. Again, workers' views on such developments should be managed with sensitivity, to ensure that they do not feel threatened, and have been sufficiently educated on how to work with the new machinery.

Harmonizing every function

By placing a higher priority on capital equipment and geological assets, mining company Boards can help shift the culture from pure volume to longer-term value. An independent, executive-level technical services committee could aid this process, giving technical personnel a bigger voice with senior management, as a counterpoint to the production agenda.

Learning and knowledge transfer should be an integral part of resource planning, so that essential skills are not lost to the organization when individuals leave or retire. All appropriate staff should receive training in technical and diagnostic problem-solving, while retiring workers could be incentivized to remain on a part-time basis or be employed as advisors.

Geological complexity is one of the biggest challenges facing the industry, and requires a joint effort by management, workers and unions to agree on the necessary technical, information technology (IT) and telecommunications infrastructure, as well as training and health and safety measures. The technical services, Human Resources (HR), health and safety and production functions have to coordinate closely, to ensure that the organization can maintain agreed output levels without sacrificing safety or overstretching the capacity of equipment or individuals.

Bringing it all together

KPMG member firms take an organization-wide view of the operating risks facing mining companies and work with member firm clients to help develop sustainable production strategies and assurance programs. Our network of mining teams have experience across all the relevant parts of mining operations, and can bring all the different functional groups together to align productivity, health and safety, technical services and training.

Key operational excellence and profitability issues

1. Increased geological complexity.
2. Major business interruption or inefficiency, due to ineffective asset management.
3. Escalating cost of resources.
4. Lack of key skills.

Regulatory compliance: demonstrating good corporate citizenship

It is part of everyone's job to help avoid incidents that could harm people, the environment and the corporate reputation. However, a compliance culture can only be built on strong ethical and structural foundations.

Dr. Kerry Jenkins
Partner, Advisory,
Regulatory Compliance
KPMG in South Africa

As Head of the Regulatory and Compliance Unit at KPMG in South Africa, **Dr. Kerry Jenkins** is also the lead partner responsible for corporate governance. Specializing in regulatory compliance, corporate governance and internal audit, she has extensive experience in regulatory compliance effectiveness reviews and structuring, risk management, Board, committee and director self-assessments and training and due diligence.

With regulatory change sweeping through the mining sector, it is now widely recognized that compliance is no longer a "tick box" activity, but an essential part of good organizational governance and risk management, with the Board holding ultimate responsibility.

Punitive fines and other penalties may be dealt out to those businesses failing to comply with laws and regulations relating to health and safety, environmental damage, employment conditions, labor relations, bribery and corruption and financial statement reporting. In the worst cases, senior executives could be imprisoned and the mine shut down, all of which is extremely harmful to the corporate reputation. Local communities may also be unwilling to cooperate with businesses that are not viewed as good corporate citizens, and vote with their feet by holding protests or withdrawing their labor.

Authorities are clamping down on perceived anti-competitive behavior, while business practices that are common in certain parts of the world – such as fees for facilitating licenses or shipments – may contravene national and international anti-bribery and corruption laws.

Organizations should also understand if and how legislation in their home countries impacts their global operations. For example, the recently amended US Security Exchange Act of 1934 (known as Dodd-Frank) now requires disclosure of payments for licenses for exploration and production, as well as introducing rules on the reporting of 'conflict' minerals mined in conditions of armed conflict and human rights abuses.[2]

In order to keep on top of all these activities, mining companies have to oversee globally consistent policies and practices. However, many organizations run compliance at a local level, where procedures and controls may be patchy, and responsibilities ill-defined, making it all too easy for errors or bad habits to proliferate. With a lack of formal upward reporting, the Board may struggle to gain a clear picture of what is happening in individual mines and may be unaware of non-compliant behavior that could result in serious repercussions.

Gaining comfort over compliance

In building a robust compliance structure and culture, businesses have to first be aware of how relevant local, regional and global laws and regulations could affect their business and then prioritize these according to their level of risk. The next step is to assess the effectiveness of current policies, practices, behaviors and attitudes around the world and uncover and address any gaps.

A compliance risk management framework should include all the necessary structures and processes to reduce the possibility of non-compliance. Companies may choose to run this framework along centralized or decentralized lines or adopt a hybrid of the two. A centralized approach tends to bring greater consistency, but in a huge global business operating across multiple geographies, it can be difficult to keep abreast of local operations. In a decentralized model, on the other hand, those with oversight are closer to the action, but equally, there is more chance of divergence from policies and inconsistent reporting.

The Board, audit committee, social and ethics committee (or equivalent), and other Board committees may oversee various compliance monitoring activities around the world. This calls for suitable governance and a smooth, timely flow of reports to demonstrate to stakeholders (including regulators) that every reasonable effort is being taken to prevent and manage incidents such as safety, environmental breaches and/or financial misconduct.

A system is only as good as those that operate it and at every level, individuals who are responsible for compliance should be trained to fulfil these duties, with compliance forming part of every employee's performance management review.

With new regulations emerging constantly around the world, mining companies have to find a way to keep track of such developments, evaluate their impact, and integrate them into their processes. A good relationship with regulators is an asset, clarifying existing obligations, and making it easier to prepare for emerging changes.

It is not just about policies and procedures – leadership needs to consider how to foster a strong compliance culture. This may mean striving for a global set of values and standards across certain areas such as health and safety, environmental management and reporting – even if these are above the minimum requirements at a local level. Such a bold pledge sends a message to both employees and stakeholders that the company takes good corporate citizenship seriously.

Remaining vigilant

KPMG's regulatory compliance professionals have an optimum blend of legal, assurance and business expertise and can help clients build effective lines of defense in order to meet their obligations. With up-to-date knowledge of the latest regulatory trends, our network of professionals understand how to create a model that works for all levels of staff. Employees charged with monitoring activities on a day-to-day basis should have the same vigilant outlook as the Board so that the entire organization is alert to the dangers of non-compliance. By working alongside member firm clients, our mining professionals learn about their specific compliance requirements and provide support in designing and implementing new or amended compliance frameworks.

Key regulatory compliance issues

1. Labor and industrial relations.
2. Tenure of license, rights or permits.
3. Evolving environmental laws and regulations.
4. Relationships with regulators.
5. Increasingly complex regulatory environment.
6. Health and safety of mine employees.

[2] *Country by country transparency: Dodd-Frank Act and EU*, Organization for Economic Co-operation and Development (OECD), 8 August 2013

IT strategy:
realizing the value of technology

IT has the capacity to do so much more than simply support administrative functions, and can help mining companies access a rich seam of data to raise their operating efficiency.

Graham Teare
Partner, IT Advisory
KPMG in South Africa

With over 11 years of IT experience in the mining sector, **Graham Teare** has worked with a variety of clients, providing insights into enhancing their IT systems. His background includes experience in internal and external IT audits, IT risk management benchmarking, IT governance assessments, establishing and implementing security strategy and governance, performance of security technical reviews and standards creation.

IT in mining tends to fall into two main categories. At an operational level, software and hardware (collectively referred to as process control and instrumentation systems) underpins the various processes that drive the mine, from extraction, through crushing and conveying to processing and refining. Traditionally, these systems tend to be separate from the corporate systems and networks and are typically run by the process or plant engineers.

As a result of the upgraded technology available, more sophisticated, larger organizations are starting to integrate corporate networks and systems with the process control and instrumentation systems to provide more control and visibility over the production process for managers. Companies are also investing in using business intelligence applications, which can also work on mobile devices, to track production progress and highlight any bottlenecks that could cause delays or shutdowns.

Enterprise systems, such as SAP and Oracle, are the backbone of functions like HR, finance, payroll and procurement. Although not as immediately critical to the day-to-day business of getting materials out of the ground, any failure in this technology would soon be felt in the form of interrupted supplies, cash flow shortage or unhappy staff who have not been paid on time.

Many companies question the value of IT, viewing it as a cost rather than an asset and regularly cull their IT resources to save money. This myopic view leaves them short of the data analysis and insight that could help them manage mining operations more efficiently.

However, the more connected the system, the more susceptible it is to malicious invasion by hackers that could potentially interfere with critical operations. Cyber threats could come from a number of sources, namely environmental activists that disapprove of mining, disaffected former employees, competitors or even governments.

It is not just fear of hacking that should alert mining companies to shore up data security; regulators are cracking down on organizations that fail to demonstrate appropriate anti-fraud safeguards or do not adequately protect confidential health, financial and other employee records.

Obsolescence is another concern, as cost-aware owners choose to merely extend old licenses in order to prolong the life of applications and hardware. Having failed to upgrade on a regular basis, the eventual replacement is invariably far more expensive. Worse still, in the interim, the company loses the opportunity to take advantage of new functionality that could bring much-needed efficiency or reporting improvements.

Getting the most out of IT

In moving IT higher up the executive agenda, mining businesses should revisit the role of technology, in general, and the Chief Information Officer (CIO), in particular. By making this a Board-level position, they can open up a wealth of valuable management information on operational performance, helping assess the relative benefits of different ways of working and make informed decisions on how the mine is run.

Consolidation and rationalization of systems can bring greater consistency and reliability to the operations of larger, multinational mining players and help them compare performance across divisions, introduce common standards, and usher in improvements. This is especially relevant when integrating newly-acquired companies, which have their own systems and technology.

The rich sources of data provided by enterprise software can also give management the tools to purchase more cost-effectively and improve cash management, which could have a significant impact upon the bottom line.

IT security should be ingrained in corporate culture, with access restrictions to financial, operational and personal data, which should preserve the integrity of financial reports and minimize the prospects of fraud. Any outsourced third party that manages IT infrastructure, servers, desktops, mobile devices or confidential data, should be systematically monitored – and audited for compliance – with client procedures and external regulations. These organizations also need to provide independent verification (e.g. auditor reports) to ensure that they are meeting appropriate standards.

Looking further ahead, automated and/or robotic mining techniques could be employed to extract materials from deeper and more dangerous locations, and IT would play a central role in managing this exciting new technology.

Attaining a new level of confidence

KPMG's IT risk and audit professionals understand the potential of technology and work with clients to build a flow of information to decision makers on issues such as plant efficiency, and data and system security. With an extensive knowledge of regulatory requirements and experience of managing third parties, KPMG's member firms can help mining companies gain greater comfort over their data and operations, carry out information security reviews and build integrated management intelligence systems.

Key IT issues

1. Making IT an integral part of strategic decision-making – not just a cost centre.
2. Gaining a central view of operational efficiency – and of any risks that could impair performance.
3. Building defences against malicious cyber attacks, by introducing robust access restrictions, appropriate security governance and regular monitoring.
4. Monitoring third parties to ensure they meet performance standards and comply with regulations.
5. Keeping abreast of any national or international legislation on IT security, data protection and fraud.

Reputation and ethics: protecting against fraud and misconduct

The three levels of defense against criminal activity are prevention, detection and response. Strong controls, sophisticated data management and a well-trained workforce, can significantly reduce the cost of fraud, bribery and corruption.

André Groenewald
Partner, Forensic
KPMG in South Africa

André Groenewald is a Chartered Accountant specializing in forensic investigations and fraud risk management. He has managed numerous investigations into financial irregularities across Africa that resulted in civil proceedings, regulatory inquiries or criminal proceedings. André is also the service line lead for fraud management, advising clients on effective strategies to mitigate fraud risk.

Fraud and misconduct can be extremely costly and undermine public trust and confidence in an organization. Businesses may be susceptible to a range of threats including fraudulent financial reporting, theft of cash or other assets, and illegal or unethical acts such as bribery, corruption, market rigging or conflicts of interest. Mining companies also have to keep up with a stream of new laws and regulations from around the world, adding a further layer of complexity to their anti-fraud and corruption efforts.

In some countries, the dividing line between accepted business practices and unlawful activity may be unclear. "Success fees" to government departments or individual officials can be commonplace, in order to clinch tenders to acquire mining licenses. However, such payments could easily be interpreted as bribery. With multinationals routinely using agents and consultants to negotiate on their behalf, it can be difficult to control the actions of these individuals – who themselves may receive bonuses for gaining licenses. Yet the company has ultimate liability for any acts of bribery and needs to establish that no actions have contravened regulations.

One common form of fraud involves criminals posing as suppliers, requesting a change of bank details. The payment subsequently flows directly to the fraudster and the scam is often only discovered when the supplier realizes that it has not been paid. Equipment repairs are also open to fraud. Items may be sent offsite to unscrupulous repair companies, who either return an inferior product or inform the store manager that the equipment is irreparably damaged, only to sell the original piece back to the mining company. Amongst the billions of dollars of work carried out by contractors and subcontractors, it is all too easy for unscrupulous people to slip in the occasional invoice for work that has either not been completed or does not even exist.

Keeping one step ahead

In building an anti-fraud and corruption culture, management should create an ethics and compliance program based around a three-pronged strategy of prevention, detection and response. Standard codes of conduct set the tone, and ensure that each employee knows exactly what is expected of them. Individuals in particularly vulnerable positions can also receive risk assessments and due diligence checks. Given that most crimes involve inside assistance, channels for "whistle-blowing", such as anonymous telephone hotlines, can identify culpable employees and send out a message that it is acceptable to speak out against wrongdoing.

"The payment subsequently flows directly to the fraudster and the scam is often only discovered when the supplier realizes that it has not been paid. Equipment repairs are also open to fraud."

The organization needs a broad ranging assessment of the risks facing it around the world, which establishes the framework for a set of controls to guard against such risks. For example, to prevent payment fraud, anyone attempting to change bank account details would have to undergo a series of checks to validate their identity and level of authority, involving contact with both the supplier and its bank. Ongoing monitoring and proactive data analysis can help detect signs of fraud at an early stage; for example, regular analyses of stock movements in warehouses can identify any unusual patterns that may indicate theft.

Third party relationships need to be carefully scrutinized to avoid the risk of misconduct and possible punitive action, such as government investigations, financial penalties and criminal liability. A full assessment of agents, business partners and clients greatly reduces exposure, as well as providing a better understanding of their operational strengths and weaknesses.

If fraud, corruption or bribery is detected, the company should have strict internal guidelines for investigating the incident(s), vetting the authenticity of allegations, conducting cross-border investigations about any allegations, and plugging any gaps in the controls to prevent re-occurrence.

To achieve a consistent global approach, it helps to have centrally-driven anti-fraud and corruption policies, with risk assessments and training carried out at site level. Companies will want to keep fully abreast of all the relevant regulations and laws, and constantly update their processes to reflect any changes. Once the controls are operating, regular internal audits ensure that they are working effectively, and that employees are adhering to the new policies. Regulatory bodies are particularly keen to see evidence of independent investigations into the strength of the controls and the response to specific incidents.

IT plays a central role in anti-bribery and corruption efforts, to gather, analyze and present data. Governance, employee and business partner reporting systems should, therefore, be carefully designed and updated. Any searches for and movement of data must adhere to strict national regulations.

Tightening the net

With a wide range of sophisticated technology tools, the KPMG Forensic team works with many of the world's leading organizations to build a strong defense against fraud, bribery, and corruption, and to thoroughly investigate any incidents. We also help prevent and resolve commercial disputes by assessing damages, resolving accounting, audit and finance-related issues and acting as an expert witness. As an objective voice, we can give regulatory authorities assurance that independent investigations and audits have been carried out. Our network of professionals use their data analytics skills to work alongside clients to access, manage and process large volumes of data, in order to help draw out appropriate insights.

Our member firms have an understanding of the latest national and international bribery and anti-corruption laws and can help assess risks, evaluate program controls and governance, screen third parties (including due diligence), and provide training programs. Our global network includes individuals fluent in a wide range of languages, with knowledge of local customs, and backgrounds in law and regulatory enforcement, fraud and misconduct risk assessment, ethics and compliance program evaluation, asset tracing, forensic accounting, computer forensics and forensic data analysis.

Key reputation and ethics issues

1. Fraudulent financial reporting.
2. Payment fraud.
3. Bribery and corruption.
4. Theft.
5. Anti-competitive behavior.
6. Market rigging.

Taxation: achieving sustainable compliance

An effective tax compliance strategy strengthens relationships with revenue authorities and gives mining companies greater certainty over their tax obligations and payments.

Rod Henderson
Global Mining Leader – Tax
KPMG in Australia

With over 27 years of experience, **Rod Henderson** has provided tax assistance to energy and natural resources (ENR) companies – literally at the "coal face". He assists organizations with resource taxation, including the Minerals Resource Rent Tax and state resource royalties and also advises on the structuring of M&A transactions, ENR investment structures, joint ventures, farm-in transactions, carbon taxes and renewables, in Australia, as well as globally.

Governments understandably seek to gain the maximum benefit from their natural resources, and if mining companies wish to retain their 'license to operate', they should be seen to be making a fair contribution in terms of tax payments. They also want to be more confident about the future tax burden for planning and forecasting purposes.

In addition to corporation tax, organizations face resource taxes such as mining and government royalties, value-added tax (VAT) and employee taxes. Some countries, notably Australia, have also introduced a minerals resource rent tax, which is a form of 'super tax' on profits, which generally crystallizes when commodity prices and margins are very high.

A number of countries have raised royalty taxes on relatively short notice and one hedge against such measures is to enter into a fiscal stability agreement. These agreements can apply to the extractors' existing or anticipated mineral resource rights, and offer guaranteed protection against increases in the mining royalty rate and other tax rates and settings.

Transfer pricing is another potentially volatile issue, with national revenue authorities concerned that businesses may be trying to shift profits to lower tax countries, via artificially low prices for inter-company transactions or favorable interest rates for inter-company debt. It is not uncommon for companies to end up in court to justify that prices are 'arm's length' i.e. the same level that would have existed between two unrelated entities.

By settling an advance pricing agreement (APA) with a tax authority, prices and interest rates are set in stone for a fixed period, avoiding double taxation and the hassle and cost of litigation, and helping maintain a better relationship between the two parties. These agreements are enhanced if bi- or multi-lateral agreements exist between the company and one or more foreign tax administrations.

Towards greater transparency

Tax is increasingly coming out of the shadows, as CEOs and company Board members recognize that being able to

Key taxation issues

1. Balancing tax optimization with a social license to operate.
2. Hedging against potential royalty rate rises.
3. Avoiding disputes over transfer pricing.
4. Disclosure of tax payments.
5. Ensuring executive tax compliance.

demonstrate that a fair amount of tax being paid is preferable to the damage caused by negative publicity from unexplained low levels of tax payments. Although there is no single, global tax reporting standard, a number of compulsory and voluntary initiatives have been introduced in recent years, in a bid to increase visibility over tax payments.

The Extractive Industries Transparency Initiative (EITI) is a global coalition of governments, oil, gas and mining companies and civil society, aimed at increasing openness over payments to governments. In countries that have signed up to the EITI standard, all taxes and other payments must be fully disclosed in an annual report, which details how much revenue is being derived from nations' natural resources.

The US Dodd-Frank Act obliges any Securities and Exchange Commission (SEC) listed mining companies to disclose taxes, royalties, fees, production entitlements, bonuses and other payments to governments on a country-by-country and project-by-project basis. And, more recently, the European Union (EU) Directive on Disclosure of payments to governments calls for disclosure of any tax payments above 100 thousand Euros (EUR). Similarly, in Australia, domestic tax laws have been introduced to require the Australian Taxation Office to annually publish the amount of income tax paid by companies with 100 million Australian dollars (AUD) or more of income, with the additional disclosure, for mining companies, of the amount of minerals resource rent tax paid.

Many global mining companies are taking a proactive approach by preparing and publishing 'Taxes Paid' reports to demonstrate their contribution to the countries in which they operate. These reports are a useful tool to get the message across to all stakeholders.

Satisfying tax authorities and shareholders

With a breadth of expertise in national and international tax, combined with an in-depth understanding of the mining sector, KPMG's tax practice can help member firm clients meet regulatory demands in a commercially-viable manner. Our professionals provide support on interpreting different countries' resource, royalty and other tax laws and submitting accurate, timely returns. Our network of professionals use a range of proprietary software to help mining companies keep track of all taxes paid around the world, providing increased control and a higher level of assurance that they are in compliance. We also carry out in-country reviews to give comfort that local tax obligations are being met.

Our International Executive Services practice offers additional help in managing and controlling executives' taxation positions around the world, with the facility to track the status of projects, and ensure that employment terms and conditions are consistent with corporate policy.

Whether a client is seeking an APA, or involved in a transfer-pricing dispute, we can offer expert support to reach a mutually agreeable outcome. And, with up-to-date knowledge of disclosure demands, we work with companies to deliver reports for the EITI, Dodd-Frank, EU and other authorities. We also help companies prepare and review Taxes Paid reports to explain the tax payments and contributions to governments around the world.

Raising the assurance game

As this paper demonstrates, mining businesses have to overcome a wide and diverse range of risks if they are to survive and prosper. Risk and assurance is too important to be left to audit committees alone, as these bodies have neither the depth of knowledge nor the resources to oversee the entire business. By extending responsibility to more specialized Board sub-committees such as investment, sustainability and remuneration, leadership can gain far more confidence in its risk management.

Once sustainability committees routinely sign off risk assessments and assurance plans for safety, health, environmental issues and social licenses to operate, the organization will have a far better chance of avoiding accidents, bad publicity, litigation against management and breakdowns in community relations.

A similar approach should apply to major projects, essential capital spend, and mergers and acquisitions, where ultimate sign-off from the investment committees brings renewed comfort in financial risk levels. Any risk and assurance programs relating to people would be the domain of the remuneration committee.

As companies re-assess their risk and assurance strategies, they should consider the following questions:

- Do they have a comprehensive, integrated assurance strategy and framework?
- Do Board sub-committees monitor risk and assurance activities effectively?
- Are they safeguarding their key drivers of value?
- Are C-Suite executives, the Board and all key stakeholders adequately protected?
- Is risk and assurance simplified – and aligned with the way the business operates?
- Is assurance coverage optimal and cost efficient and directed where the business needs it most?
- Do appropriate bodies have oversight of risk and assurance?

To help companies get a better grip on their 'risk universe,' KPMG offers an Integrated Assurance Strategy that addresses these questions. Our highly experienced network of global specialists work with clients to integrate assurance into the business – enabling organizations to become true masters of risk.

Dane Ashe
Global Mining Leader – Internal Assurance
KPMG in South Africa

KPMG's Global Mining practice

KPMG Global Mining Centers

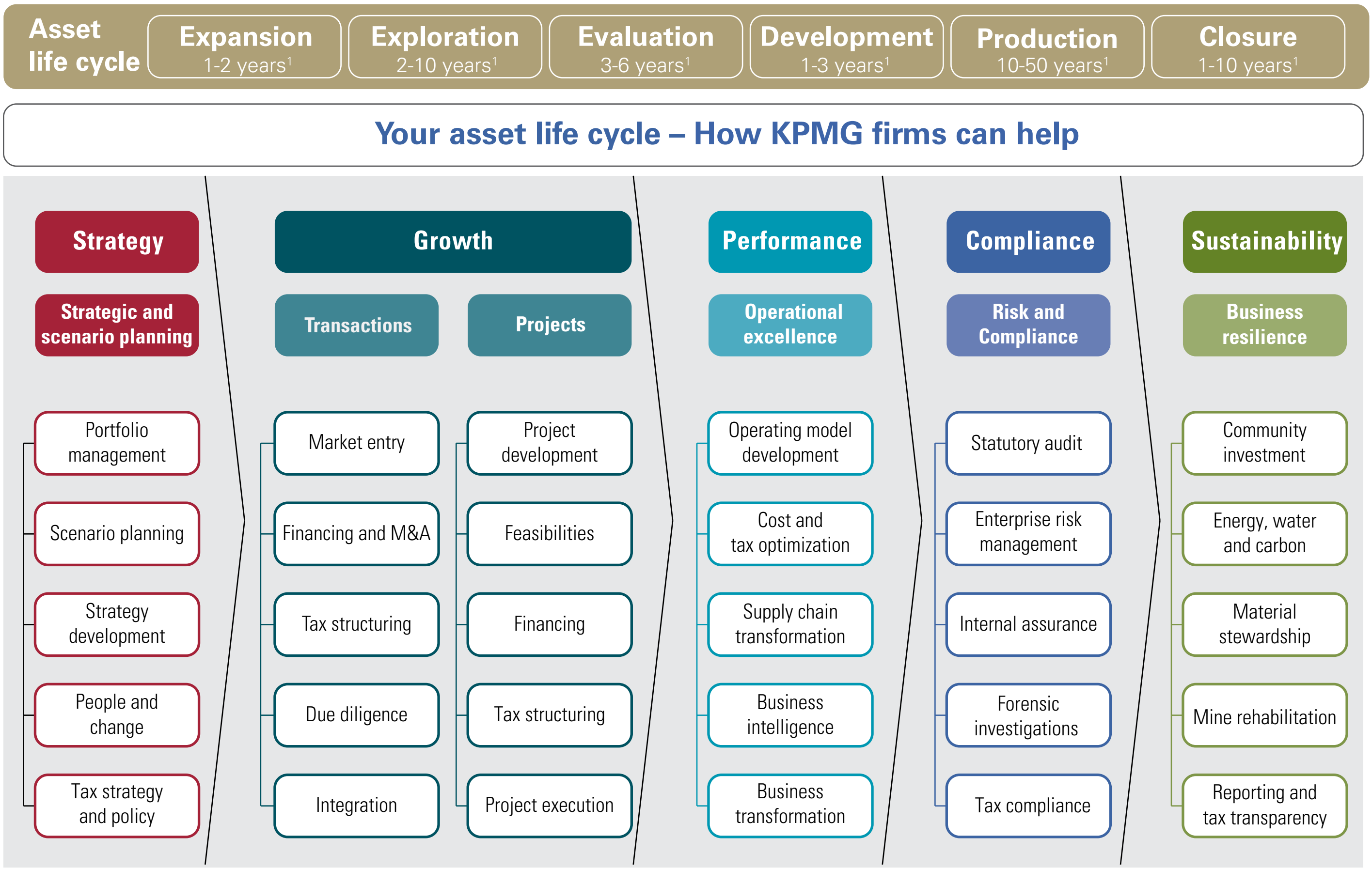
KPMG member firms offer global connectivity through our 14 dedicated Mining Centers in key locations around the world. By working together seamlessly, we help member firm clients adapt and respond to a rapidly-evolving mining environment.

Our centers are located in or near areas with high levels of mining activity: Beijing, Brisbane, Denver, Johannesburg, London, Melbourne, Moscow, Mumbai, Perth, Rio de Janeiro, Santiago, Singapore, Toronto, and Vancouver.

Each center is composed of professionals with extensive practical experience in the mining industry who work together to share information, thought leadership, training, and support. As a client, you will get access to the latest industry thinking, skills, resources, and technical development from a team that has local knowledge, backed up by in-depth global expertise. Our firms are continually building our understanding of global trends and developments by sharing observations and insights with you.

For more information, visit **kpmg.com/mining**

KPMG – mining service offerings



Source: KPMG International 2012
[1]Estimated duration of stage in the mining asset life cycle

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