MiningVoice

Volume 3 | February 2013

Deloitte Canada's mining newsletter

In this issue

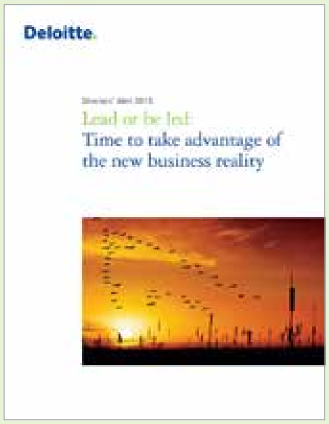
Deloitte.

In this issue

Mining Voice

In a rapidly changing global economy, the energy and resources industry faces unprecedented challenges. Our Canadian mining companies are not immune to these challenges, including, the run-up in base metal prices, environmental concerns, industry consolidation and managing the impact of global exchange rates.

With the increasingly complex environment facing the mining industry, Deloitte has responded by issuing this quarterly mining newsletter, **Deloitte's Mining Voice**, to share valuable insights on the topics relevant to mining companies, which we hope you will enjoy.



The **Directors' Alert 2013: Lead or be led** publication offers insights from governance specialists from Deloitte member firms around the globe – Asia, the Middle East, Europe and the Americas; these specialists have provided local and international perspectives on these and other top boardroom priorities within the context of today's uncertain business environment. Each article includes questions that directors may ask to further explore the issues with their own boards. In addition, articles are supported with tools and resources so directors can "dig deeper" to broaden their understanding of the issues and improve their board's effectiveness in dealing with them.

The purpose of this publication is not to provide solutions to the issues discussed. The best approach for any organization will depend on its own particular circumstances. Instead, our objective is to assist directors in identifying issues of importance to their organizations, and to help promote boardroom discussion around the strategies management has put forward to address the challenges and seize the opportunities that lie ahead.

Download

Introduction

Happy New Year! Welcome to the third issue of Deloitte's *Mining Voice*, the first of 2013. We hope you found the first two installments useful and that you got a chance to share and pass them along to your fellow colleagues and other decision-making professionals in the mining industry.

In this issue, we touch on a number of noteworthy topics. In the piece on **team effectiveness**, we look at how mining companies can incorporate programs that produce well-aligned, cohesive and successful teams. Meanwhile, in the piece on **export controls**, we consider how managing export compliance can minimize risk, improve performance, and reduce costs. Finally, we feature the latest (2013) edition of our annual *Tracking the Trends* report, which not only reviews the top 10 potential challenges mining companies may face this year but also equips readers with potential solutions for overcoming those challenges.

We also highlight Deloitte's mining workshop series at the Prospectors & Developers Associations of Canada (PDAC) convention this coming March and show how you can get involved.

As always, we welcome your feedback and look forward to hearing from you. Feel free to contact any of the contributors to this issue's articles if you have any questions or comments.

The *Mining Voice* team

Mining trends 2013

Still on track

It's a new year and with it comes, for us, a new edition of our annual Tracking the Trends publication, which has since 2008 examined the key challenges facing the global mining sector. Every year, we talk to Deloitte partners from around the world to determine what's top of mind with mining leaders, how they've managed the challenges of the previous year and what has changed, or not, for them and for the sector.

This year, we've also upped the stakes and endeavoured to put more focus on ideas that companies can use to solve their challenges, whether individually or, in some cases, as a whole. That, in fact, has become the number one request of our readers over the years – while most have expressed appreciation for our identification and analyses of key trends, increasingly we are being asked to pose answers to their toughest questions.

We hope, with this year's edition, not to disappoint.

From my own perspective, the strength of this document is that it's easy to read and, though it has been growing in scope since the earliest editions, many CEOs have told me the report continues to be impactful and that they ask their management teams to consider the trends we discuss and report back on how their companies measure up. The idea that our report has become something of a barometer or measuring stick of these companies' progress and performance brings me and all of Deloitte's global community of mining professionals a great deal of satisfaction.

Our main objective is to provide a real and comprehensive update on where things stand in the mining business.

Here, in a nutshell, are the trends, and possible solutions, for 2013:

1. Counting the costs

Paying the price of bullish behaviour

Costs are on the rise across the board – from equipment, raw materials and labour to input costs, infrastructure investment and compliance. Capital project costs are also spiraling, with rising labour and materials prices pushing up construction costs. To improve financial discipline, miners should pinpoint their cost drivers, automate, use analytics to improve asset efficiency, improve operating models, streamline the supply chain and share costs with industry peers.

2. Managing demand uncertainty

Conflicting market indicators magnify volatility

Slowing growth in key regions of the world, including China, is making it difficult for mining companies to predict – or plan for – future demand. Some companies are responding by halting production or delaying projects. Rather than risking an inability to meet future demand, companies may want to consider applying game theory to enhance their scenario planning, using multi-attribute decision analysis (MADA) to better quantify project benefits and improving decision making with more sophisticated analytics.

3. Capital project deceleration

Quality trumps quantity in the project pipeline

Capital project overruns are escalating due to a range of both external and internal pressures. In response, companies should take steps to narrow their focus to those projects capable of delivering a demonstrable return on capital. Options for making more disciplined investment decisions include more careful capital allocation, improved capital efficiency, project rationalization, customer use research, data analytics, project delivery quality assurance and good governance.

4. Preparing for the M&A storm

Market indicators point to rising deal volumes

Both debt and equity capital remains tight. To attract capital, some companies have begun to pursue proactive and "rescue M&A," by attempting to enter deals pre-emptively with partners of their choice. As deal volumes rise through 2013, miners can improve their odds of transactional success by knowing their partners, engaging in more comprehensive due diligence and planning for the integration in advance.

5. Governments eye the mining prize

Resource nationalism remains

Governments around the world are exercising numerous forms of resource nationalism, from mining industry privatization and expropriation to the introduction of windfall taxes, resource taxes and export controls. To help counter this political instability, mining companies should work to strengthen relationships with national governments, band together to improve their negotiation strength, diversify their commodity mix and geographic areas of focus, and demonstrate the industry's value to local governments and citizens.

6. Combatting corruption

Miners are being held to higher standards

To counter the risks posed by corruption, mining companies have begun to adopt global transparency standards. Heightened regulatory scrutiny will mandate even more responsible practices – for companies as well as their suppliers and service providers. This will require the adoption of strong corporate practices, such as third-party relationship management, internal compliance programs and investigation readiness.

7. Climbing the social ladder

A new level of responsible behavior

Corporate social responsibility involves understanding shifting community and government expectations, addressing the demands of NGOs and relevant stakeholder groups, and committing to a higher level of transparency and operational sustainability. To meet these expectations, leading companies are embedding sustainability into their internal processes, engaging in micro-economic analysis, earning project buy-in with more intimate community engagement, adopting social media strategies and using data analytics to get early warning of emerging risks.

8. Plugging the talent gap

Skills shortages still loom

Looming skills shortages threaten the mining industry's long-term productivity. Companies have responded by sponsoring university programs, recruiting from non-traditional labour pools and engaging in workforce planning. Other solutions include strengthening the owner's team, cross-training, training – and retaining – local talent, confirming their approach to work/life balance and exploring labour-driven acquisitions.

9. Playing it safe

Using analytics to generate insights and improve safety outcomes

Many mining companies have seen their safety performance plateau and some continue to experience serious safety incidents and fatalities. To improve safety outcomes, companies need to understand the factors that cause safety incidents. Other strategies include integrating new technologies into existing processes, improving preventative maintenance and using predictive modeling to identify at-risk segments and improve the structure of safety programs.

10. At the IT edge

Getting the most out of emerging – and existing – technologies

Mining companies are increasing their technology investments. Yet many fail to leverage back-end technologies, such as data analytics. Many also fail to properly integrate disparate technology platforms following a merger or acquisition. To improve operations while reducing costs, mining companies should revisit their IT strategies to consider investing in programmable logic controllers (PLCs), supervisory control and data acquisition (SCADA) systems, remote operations, manufacturing execution systems (MES), business intelligence systems, data analytics and advanced manufacturing systems.

We believe that, while short-term demand may taper, global trends point to strong long-term demand. Rather than halting production in the face of capital cost increases and shareholder demands for more immediate returns, miners should plan for future commodity requirements by making investments today. By committing to a long-term course of action, mining companies can do more than spur stronger industry profits. They can also play an increasingly instrumental role in the advancement of local communities, the support of undeveloped economies and the growth of jobs and skilled talent around the world.

For more information, please read the full report

Download

Glenn Ives is a partner in Deloitte's Audit practice, the Chair of Deloitte Canada and the leader of Deloitte's Americas Mining practice. He can be reached at gives@deloitte.ca.

Team effectiveness yields success in the mining industry

Do you work with some of the most impressive and experienced individuals you have ever known yet wonder why the team's performance isn't meeting expectations? If so, you are not alone.

Research demonstrates that the creation and maintenance of high performance teams is one of the most important tools an organization has to ensure strategic success. However, while the development of such teams may sound simple in theory, it is exceptionally difficult to put into practice, mostly because team creation does not come naturally to most leaders.

And the role of the organizational or functional leader in creating teams is vital.

Historically, leaders in the mining industry have been selected more on the basis of their technical competencies than on their leadership skills or any formal training they may have had in motivation, communication or directing large groups of individuals[1]. But successful leaders today support their industry knowledge and technical competence with the right leadership skills, a unified strategy and methods for holding individuals accountable.

Indeed, research cites effective leadership as a stronger indicator of success than product quality[2]. This suggests that mining leaders should focus on making effective leadership a core competency. Moreover, investment analysts ascribe 13% of a mining company's equity value to an effective senior leadership team[3]. What does this mean? Simply that mining leaders supported by strong, effective teams are better able to deliver operational and financial success.

Supporting by example

The features and benefits of high-performing teams are many, including unified goals, role clarity, high levels of accountability and effective decision-making. In other words, in high-performing teams, everyone is clear on the big picture and their role and value in it. Further, all team members embody the values identified as necessary for success and are therefore willing to motivate, support, and hold each other accountable. Moreover, they know how to leverage the interdependencies among team members to get the best result. This is the true value of a team.

In mining operations, however, the teams are large and complex, comprising a diverse group of individuals across multiple organizations, from very different work cultures and for different durations and work scopes. In these complex environments, clear accountability and role clarity are often difficult to achieve, resulting in a negative spiral on both communications and the ability to make effective decisions.

As a result, these teams become less than the sum of their parts, which matters because safety, financial and operational success all depend more on team performance than on the performance of any one individual.

The way to avoid this problem is to invest in a team effectiveness program. A heightened focus on team effectiveness (meaning, "the extent to which teams produce the output requirements of the job") can give a mining organization a vital competitive edge, especially if the principles of effectiveness are embedded early in the project's development. There's a further benefit, too: development of groups of individuals into high-performance teams teaches the entire organization to trust and challenge one another, to communicate openly and to hold each other accountable for results, including the safety of all team members.

Trends with benefits

Team effectiveness programs are becoming increasingly popular. Since investing in associated training at the beginning of 2012, platinum mining company Lonmin has experienced a 7% improvement in efficiency at the Karee Mine 1 Belt shaft at its Marikana mine[4]. Furthermore, the company noticed a material decrease in the number of safety incidents at their facilities.

For companies just beginning to look at this kind of investment, a good first step will be to measure the current level of team leadership against relevant industry benchmarks. Assessing a team's current state will reveal the most important aspects of effectiveness in need of development. The next step might then be the setting of strategies and goals at the executive level that are then embedded into the organization through a series of cascading workshops to align accountabilities. The cascading element of these workshops is essential. It is not enough to focus the team effectiveness activities with just the senior leadership: to yield success, team effectiveness must be systemic and touch all parts of the organization.

Beyond the tangible gains associated with safety and production, people in effective teams will also be motivated from a clearer understanding that they are valued. They will feel not only empowered to hold each other accountable to the timelines, safety and quality of their individual workmanship but also proud to be on the team.

Moreover, the tools used to measure team effectiveness are as transparent and systematic as the tools used to manage projects, allowing mining leaders to quantify their "intuitions" and present empirical evidence regarding any challenges currently being experienced. By revealing which expected core competencies of a team need to be developed, leaders can identify where to effectively focus their attention and investment.

Strength in numbers

A Japanese proverb has it that "A single arrow is easily broken, but not ten in a bundle." Organizing your people into a hierarchy of high-performing teams will strengthen the organization and position it for success. Take a minute to look at your organization. Are your teams performing at a high level? Do there appear to be areas that could use improvement? If so, take the opportunity to diagnose your current state of team effectiveness. Use quantitative data, and create a program that will best support the development of your strategic objectives. In doing so, you will dramatically increase the likelihood of your team's success.

1 "Zero harm is possible – Lonmin". *Mining Weekly*. Retrieved from: http://www.miningweekly.com/print-version/zero-harm-is-possible-lonmin-2012-08-24, October 11, 2012

2 Leadership Premium

3 Ibid.

4 "Zero harm is possible – Lonmin". *Mining Weekly*. Retrieved from: http://www.miningweekly.com/print-version/zero-harm-is-possible-lonmin-2012-08-24, October 11, 2012

Export controls

and the mining industry

How compliance can create a competitive advantage

As companies operating in a highly regulated industry, mining companies are no strangers to regulatory complexity. In addition to a multitude of national and international legal requirements, the mining industry must also comply with stringent export control regulations.

Today, export controls are a high-profile topic. They are one of the key tools used by governments to support national and international security policies and to assist in the prevention of the proliferation of weapons of mass destruction (WMD) and related terrorist activities.

What are export controls? Countries around the world, including Canada, maintain a comprehensive set of export control regulations which restrict the tangible and intangible movement of certain goods, software and technology across borders, regardless of the means of delivery. This includes, for example, providing technical support and even accessing servers from abroad in cases where controlled technology is involved.

Export controls impact companies operating in a variety of different industrial sectors. In fact, in many cases, it is not always obvious that goods or technologies are subject to export controls, or that a particular action constitutes an export. For example, in addition to military-related products, export controls apply to many "dual-use" goods, software and technology widely used in commercial industries, including mining.

Many of the equipment, software and technology used in mining operations, such as in exploration, are subject to export controls due to their ability to be used in WMD programs and delivery systems. For example, the following dual-use items and materials may require a permit for export:

- Deep-hole drilling machines
- Detonation devices and equipment (such as exploding bridgewire detonators, exploding foil initiators, and firing sets)
- Gyros, accelerometers, gravimeters, multimeters and inclinometers
- Vibration test equipment
- Surface to ground communication equipment
- Thermal resonance imaging equipment
- Heat exchangers, coolant pumps, storage tanks
- Pumps, valves, seals, pipes and nozzles
- Certain equipment for producing metals alloys, metal alloy powder or alloyed materials
- Certain high strength aluminum, nickel, maraging steel, titanium and magnetic metals
- Chemicals
- Related software and technology

While mining companies have always been subject to export control regulations and enforcement, five recent trends are making this topic a key strategic issue at the top of the corporate agenda:

1. **Increase in the size of fines and sentences**
   Penalties for violating export controls can significantly impact the bottom line. For example, it is not uncommon for enforcement agencies to impose fines in the seven to eight figure range. In addition to financial penalties, corporate violators can also face significant business disruption and reputational damage, such as loss of contracts, drop in share prices, and supply chain delays. Earlier this year, a large Canadian company was fined $75M US and statutorily debarred for violating US export controls.

2. **Increase in enforcement activities and global coordination**
   With the increase in terrorist activities, global conflicts and efforts to prevent the WMD proliferation, governments globally have adopted a more aggressive approach to enforcement, with more companies being found in violation of export controls than ever before.

   Enforcement agencies are also working together more closely to identify potential violators. For example, customs agencies in an importing country are screening imports and communicating potential violations to enforcement agencies in the exporting country. This has resulted in seized shipments, supply chain disruption, and investigations and audits by export control authorities.

3. **Increasing complexity of global supply chains**
   Effective supply chain strategies are more important than ever before. Increasing international collaborations and logistics integration mean that companies must embed compliance with export controls regulations spanning multiple jurisdictions into supply chain strategies. In addition, businesses must also address US export controls regulations which are extra-territorial in nature and apply to US-origin goods, technology or software, US companies or US persons, wherever located.

4. **Volatility of the geopolitical landscape**
   With operations often located in sensitive destinations, mining companies must be mindful of frequently changing domestic and regional geopolitical situations. Circumstances which threaten to erode peace and security, such as WMD proliferation or internal repression within a country, often result in the application of multilateral sanctions and embargoes by the international community. These trade and financial restrictions may hinder the ability of mining companies to operate in countries subject to sanctions and embargoes. For example, sanctions often include restrictions on conducting financial transactions or making new investment; a prohibition export of certain products and technology; and the provision of certain technical assistance.

5. **Diversification into new markets**
   In addition to expanding operations into new higher risk mining locales, such as Eritrea, Democratic Republic of the Congo and Liberia, many mining companies are also venturing into new directions, including capitalizing on vertical integration opportunities. An in-depth assessment of the export control requirements associated with these new activities should be conducted as early in the strategy and planning process as possible to avoid any unforeseen compliance obligations.

In light of these trends, it is easy to see why export control compliance has become both a strategic issue and an operational imperative for mining companies. Increased visibility of global mining operations has meant that mining companies are often the subject of public scrutiny, resulting in a demand for heightened corporate responsibility throughout the sector. Failure to comply with export controls can not only negatively impact global and regional security; it also has severe implications for corporate image, reputation and the bottom line. Consequently, compliance with export controls should not be excluded from risk-based corporate responsibility strategies.

Businesses that have invested in a leading practice internal compliance program (ICP) understand the benefits of approaching this subject strategically and enjoy a competitive advantage over companies that continue to view export compliance solely as an administrative issue.

Creating a leading practice ICP can yield positive returns. Given the strategic importance of export compliance and the multidisciplinary expertise required to properly develop and implement effective ICPs, more and more companies are turning to outside advisors to build or enhance ICPs and to optimize global trade strategies.

When approached strategically, managing export compliance can minimize risk, improve performance, and reduce costs. And at the end of the day, isn't that what running a business is all about?

Deloitte's market leading Export Controls team has a global reputation for its quality and expertise. We have helped many clients, including Fortune 100 and FTSE 100 companies, develop and optimize their global trade strategy, so that the movement of goods and technology enables their overall business goals. Our team has a thorough understanding of the export control challenges faced by companies, including complying with Canadian, US, EU and other national export control and sanctions regulations.

PDAC mining workshop series

Deloitte hospitality suite

Suite 332, 3rd floor, Intercontinental Toronto Centre
255 Front Street West, Toronto, Ontario
Join Deloitte's global and Canadian mining leaders for a series of mining workshops geared to helping you extract greater value. We will be presenting on a wide range of topics important to the mining community, including tax in Latin American markets, cost reduction, finance transformation, safety analytics and energy management.

Register

Cost reduction March 4, 2013 (12:30-1:30PM)
Uncertainty in the global economic environment continues to be a top concern for executives at large global companies. In response, companies are increasing their focus on growth priorities while maintaining the intense cost focus seen in the past few years. These cost efforts broadly fall into one of three categories – slash and burn budget cuts, continuous improvement initiatives and structural changes to the cost structure. A recent survey we conducted showed that companies tend to focus on the first two of these categories and that savings are harder to come by – almost half the companies are not achieving their cost reduction targets in comparison to 20% in 2010. At this session, we will share the results of the survey and discuss how successful companies have achieved structural changes to their cost structure.

Tax in Latin America markets
March 4, 2013 (8:30-9:30AM)
March 5, 2013 (3:30-4:30PM)
Join Deloitte Tax Leaders from Mexico, Peru, Colombia and Argentina as they discuss the political and economic landscape impacting mining investments in Latin America. Topics will include recent tax developments and key country trends including mining taxes, incentives, royalties, tax disputes and tax reforms impacting structuring and financing opportunities in the region.

VenmynDeloitte
March 4, 2013 (10:00-11:00AM)
March 5, 2013 (2:00-3:00PM)
This presentation will introduce Deloitte's new technical and economic mineral advisory business based in Africa – Venmyn Deloitte, recognized for its extensive technical abilities in the evaluation of acquisition and divestiture opportunities, the preparation of corporate mineral resource and mineral reserve disclosure and the estimation of mineral resources and mineral reserves.

Capital markets March 4, 2013 (2:00-3:00PM)
The current capital markets present unique challenges for emerging resource companies. Straightforward equity financings, combined with syndicated bank facilities, are typically no longer practical project financing arrangements. Instead, tailored financing solutions are increasingly required, demanding unique capabilities and persistence, as well as patience, to structure and execute transactions successfully. Join us as we review the latest developments in capital markets, interpret mining financing trends and implications, assess M&A and project finance options, and share our insights on strategic options for mining companies.

Predictive project analytics March 4, 2013 (3:30-4:30PM)
From mineral exploration to mine construction, all mining organizations rely on capital projects to achieve their business objectives. The reality is that most projects nowadays are non-routine and in locations that could severely impact benefits, timelines and budgets. Join us as we explore how to protect project investments by leveraging predictive project analytics (PPA) to assess whether or not a project will be successful, and bring another layer of practical information that will assist the program or projects in achieving success.

Finance transformation March 5, 2013 (8:30-9:30AM)
Adapting to strategic shifts in the market, adjusting to the changing regulatory environment, driving changes to companies' business models, and striving to maintain efficiencies in organizations are just a few of the catalysts that have forced finance functions to adapt to an ever-expanding scope of responsibilities. For mining companies in particular, this trend is complicated by the transition from exploration stage, to development stage and into commercial production. This session will address strategies for finance functions to consider as they work through these challenges, including identifying the function's needs and developing efficient and effective sustainable solutions for mine operation readiness.

Safety analytics March 5, 2013 (10:00-11:00AM)
An organization's strategy and implementation of workplace safety programs directly affects its reputation, profitability and ability to attract and retain talent. Ineffective safety programs can lead to severe repercussions for those responsible for protecting workers. Organizations need a way to identify the potential "causal factors" of a safety incident and, on the basis of those factors, predict the likelihood of future incidents before they occur. In this session, we will explore the application of predictive modeling techniques that organizations can use to identify the driving factors of workplace incidents with the goal of developing effective prevention strategies.

Energy management March 5, 2013 (12:30-1:30PM)
Since 2005, the context within which decisions related to energy are made has changed dramatically; a shift that appears to be structural, rather than operational, in nature. In this session, we will consider a range of questions related to this new reality, such as whether the current mine operating model is "fit for purpose" in a world where energy has become as much a strategic as an operating issue, and what the possibilities are if energy becomes the driver of mine design and management.

Contacts

National contact

Jürgen Beier
National Mining Leader
416-874-3146
jbeier@deloitte.ca

Regional contacts

Gregg Orr
BC Mining Leader
604-640-3063
gorr@deloitte.ca

Richard J. Clark
Toronto Mining Leader
416-601-6223
richaclark@deloitte.ca

Leigh Derksen
Prairies Mining Leader
306-343-4431
lderksen@deloitte.ca

Martin Granger
Québec Mining Leader
514-393-7177
mgranger@deloitte.ca

Paul Stauch
Ontario Mining Leader
613-751-5420
pstauch@deloitte.ca

Brian Groves
Atlantic Mining Leader
709-758-5225
bgroves@deloitte.ca

Special contributors

Alison Brady
National Export Controls Leader
604-640-3071
alibrady@deloitte.ca

Catherine Parsons Dhamija
Senior Manager, Human Capital
416-775-7494
cparsonsdhamija@deloitte.ca

Paul Greeley
Partner
709-758-5092
pgreeley@deloitte.ca

Geneviève Provost
Partner
514-393-7806
gprovost@deloitte.ca

Glenn Ives
Americas Mining Leader
416-874-3506
gives@deloitte.ca

Alex Twells
Senior Manager, Human Capital
709-758-5287
atwells@deloitte.ca

Designed and produced by the Deloitte Design Studio, Canada. 13-3150