Welcome to *Insights into Mining*, a periodic e-newsletter focused on current topics relevant to the Mining Industry.

KPMG’s mining practice is committed to the industry and will periodically publish a series of insightful articles authored by leading KPMG Mining professionals and advisors. The articles are designed to inform and stimulate debate amongst those involved in the industry. If you have any questions, please contact your local KPMG representative or click here for a list of KPMG’s Mining leaders across the country.

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**Project risk and the role of the board**

**How can a mining company come to grips with capital cost overrun?**

For the mining industry, controlling costs on capital projects has become a very challenging issue. In fact, it ranks among the top three most challenging issues for mining executives, according to a KPMG survey conducted in September 2014. Mining projects are increasingly complex to plan and execute, partly because they are built in remote areas of the world that must often be supplied with costly infrastructure for transportation and energy.

In the coming years, nearly $160 billion in mining projects has been proposed for Canada alone.¹ The average cost of a greenfield project today can run from hundreds of millions of dollars into the billions. Looking at a sample of seventeen recent greenfield projects, the average cost overrun was ninety-five percent above original estimate. Canadian mining companies have also written down assets by US$17 billion since the beginning of 2012.²

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¹ Source: “Mining Association of Canada, Facts and Figures,” 2014
² Source: Various company disclosures, Bloomberg, as of July 1, 2013
Projects then and now
Since the early 2000s and through other periods of higher commodity prices, the most important consideration for project development was fast-track delivery. Mines needed to go into production as quickly as possible, because commodity sale revenues would soon outweigh execution cost overruns. The need for fast delivery arguably made the “on time” side of a project more important than the “on budget” side. It pulled attention away from cost estimate accuracy, and gave mining executives incentive to start projects early and drive to completion.

Fast forward to 2015, and the picture looks very different. In a commodity price environment where mines struggle to be profitable, unexplained capital cost overruns are galling to institutional and private investors. Now these investors are asking tough questions, and expecting the board of directors to be accountable. In turn, the board is looking inside the organization for solid information that will satisfy investors, and help preserve the company’s equity.

Mining’s design/build function
Project design/build is seldom a core function within today’s mining organizations. The industry has often relied on engineering firms to manage the design and build of its capital projects as an alternative to developing “in-house” project management capability.

This leaves project development at mining companies to become a subset of the operations function, staffed primarily by operations people. At many companies, a Senior VP leads the projects area and reports to the Chief Operating Officer. The projects team on the ground may or may not have in-house access to the skill sets of civil engineers with design/build or construction management experience. Project reports for the board would follow normal upward channels, from the ranks of the regional projects area to the Senior VP to the COO to the CEO and the board.

The operations (mining) function may have also engaged the services of an engineering, procurement and construction management (EPCM) firm to assist with managing this wide range of project-related needs. A certain amount of reporting would flow from this relationship, depending on the nature of the arrangement. In our opinion, however, it is not uncommon for these project reports to be heavier on technical details and lighter on commercial and strategic considerations such as strategic planning, financial controls, risk management, and construction cost variance analysis.
Is status quo adequate for the board?

At a time when capital cost overruns are among the worst problems for mining companies, traditional reporting systems to the board for projects are not meeting contemporary needs. First of all, reports of serious cost overruns must be able to reach the board quickly; within hours or days instead of the weeks or months it can take to pass a report up through the organizational hierarchy, from site to regional offices, then on to corporate head office.

Second, those reports must reflect the plain unvarnished truth, even if the news is very bad. In most corporate organizations of any kind, bad news with a high price tag can attract the wrong kind of attention. When reports hit several desks on their way to the board, the message has an opportunity to be repositioned for any number of reasons.

Third, the board must receive project reporting in a concise and direct form that directors can easily digest and understand. This is true of reports about cost overruns through execution, but it is also true of reports generated through the stage-gate planning process.

Another problem related to those above is the expectations mining companies often have for EPCM providers. These excellent firms have strengths and weaknesses that need to be understood as part of the risk assessment for the overall project. Without a doubt, the main strengths of EPCM firms are design engineering and feasibility studies, which make them particularly effective partners for the upfront planning stage of a project. But at the execution stage, EPCM firms have not traditionally accepted transfer of construction risk. The mine owner retains all risk for construction costs – usually the largest spend (and risk) in a greenfield project. Furthermore, some EPCM contracts do not contain enough disincentives to help ensure that construction cost management remains the priority. Project reports to the board from this source must be viewed accordingly.
What needs to change?

Companies also need to build teams of execution-side project experts that mainly include engineers with construction experience, but also include other professionals with construction experience such as accountants and contract lawyers. Such a team can include a blend of employees and professional advisors, because the mix of relevant delivery skill sets is paramount.

1. Develop in-house construction specialization that can be applied through the upfront planning stage to increase the accuracy of cost estimates.

Fundamentally, mining companies need to recognize mine building as a core activity of the organization. Owners can play a much more visible role in the management of construction contractors, while leaving EPCM firms to focus on engineering, design and procurement of long lead items. Companies should use their in-house construction knowledge to help drive effective upfront project planning and definition, helping to reduce the risk and cost of changes at the execution stage. Other risk-reducing tasks that are well suited to an in-house approach include producing and validating cost estimates, performing value-engineering workshops, challenging scope assumptions, and defining the contracting strategy.

2. Create a capital projects sub-committee of the board to oversee and manage capital project assurance reviews.

To keep the board right up to date on projects matters, mining companies should consider creating a capital projects sub-committee of the board in charge of independent project assurance programs on major capital projects. On a regular basis, this sub-committee would meet with management’s projects team together with the independent project management advisors mentioned above to review progress, cost performance, and risks. Bad news would be delivered upfront, and solutions proposed that would give the board actionable information to mitigate risk proactively.

The board will potentially benefit from an independent assessment of the business case presented by the project management team before advancing each project to its next stage of development. Once projects have moved through to execution stage, independent monitoring of cost and schedule performance will help give added assurance to the Board about project performance and risk management.
3 Develop **dashboard reporting for the board focused on detailed cost performance metrics.**

Miners can work with professional advisors to develop executive dashboard reports for the board that are informative, easily understood by the broader team, and more consistent through time for comparison purposes. When a reporting format focuses on the root causes and locations of cost variances, it can lead to more efficient discussions as well as proactive executive and project team decision-making.

4 Consider alternative delivery models such as **engaging individual firms for E, P and CM support.**

If an EPCM provider is not satisfying the company on the execution side, there is an option to hire different companies that exhibit core competencies in each area. Although it may first appear that fees and administrative requirements may be higher, this is not necessarily the case. The quality of oversight and reporting could be higher, and cost reductions may be easier to identify and achieve with the right team composition.

5 Build **more effective risk transfer mechanisms** into EPCM and construction contracts.

Striking the right balance between incentives and disincentives in EPCM and construction contracts will help promote a collaborative owner/contractor relationship, and strengthen the contractor’s focus on cost management. Many large infrastructure developers are moving away from the reimbursable “time and materials” contract strategy and moving toward a “lump sum” strategy for certain elements of the scope.
Conclusions

As mining companies continue to seek to create long-term value for shareholders, capital cost overruns have been working in the opposite direction – draining value from companies and driving away investors. Promising projects are being suspended, closed or even divested because of past failures. In a business environment of low commodity prices and high investor scrutiny, capital projects can no longer afford to fail.

Companies can get a handle on capital costs from the board level on down by changing their mine-building mindset. This does not necessarily mean foregoing relationships with EPCM firms, but it does mean evaluating alternative delivery models where:

- More upfront planning investment of time and money is accommodated before projects are approved
- More risk is transferred to contractors as a result of increased planning efforts and improved scope definition
- More direct involvement is reserved for mine owners when managing the construction stage.

This formula can be partly achieved by enhancing in-house engineering/construction expertise (at both management and board levels) as well as empowering the project assurance team to carry out independent project oversight from early planning right through execution.

When the right team and reporting mechanisms are in place, the board will gain the confidence to delegate detailed oversight of development projects.

A capital projects subcommittee of the board should be asking some key questions:

1. Is our projects delivery team led by design/build professionals? Do we have a strong design/build management professional leading delivery on the ground?
2. Do we understand how much upfront investment is required through the definition stage of the stage-gate process? Have we allowed sufficient time for the cost estimate to evolve and gain maturity through the stage gate process?
3. Have the key elements of our business case (cost estimate, risk, contingency, management reserves) been vetted by external experts (independent project advisors) prior to board approval?
4. Does our monthly executive/board reporting satisfy our needs?
5. Are we able to effectively ensure that executive management decisions are quickly deployed at site level? Are we able to delegate project management and budget accountability to project directors on the ground?