

Are you ready to dig?

*Looking beyond current
market conditions*

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pwc

What do you value?

Introduction



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The ongoing appetite for minerals from China and other countries is seemingly insatiable, spurring Australian companies to ramp up their investments to meet long term demand. On the face of it, it can seem like there is very little downside to commissioning new mining activity or expanding existing mines. But is that really the case?

We have seen commodity price increases over the last decade however there is some uncertainty about how long these relatively high prices can be sustained. Indeed there have been commodity price fluctuations in recent months, coupled with other factors such as increasing cost bases, new taxes and high labour costs – all of which impact the success of an operation and more broadly the value of an organisation. These forces, we believe, are not incidental, nor will they be short-lived.

Getting capital investment decisions right in the first instance is now more important than ever. It's critical that companies employ a strong approach to risk management and rigorous decision making frameworks when assessing new investment opportunities. Pressing forward with a poorly defined program, we argue, will ultimately erode and potentially destroy overall project value.

Performing scenario analysis and maintaining corporate agility to respond to external market place changes will not only prevent poor investment decisions but work to preserve and improve value for companies and their stakeholders in this world of volatile margins.

For these reasons we have adopted the title *Are you ready to dig?* This is a question for all stakeholders to challenge the conventional thinking when approaching upcoming investment decisions.

I hope you enjoy.

A handwritten signature in black ink, appearing to read 'Jock O'Callaghan', written in a cursive, flowing style.

Kind regards,

Jock O'Callaghan



Local and international market uncertainty

Global project development conditions in the mining sector have never been more complex. As painful macroeconomic adjustments are being made around the world to restart many struggling economies, many governments are revisiting mining royalty and resource tax schemes, in addition to devising new ones. In the middle of these economic changes is an increasing volatility for commodity prices sending mixed messages, depending on whether market observers are focusing on demand or supply signals. Across the mining sector, and the resources sector more broadly, we are seeing an impatience to move forward with capital investment projects, or if not, a valid pressure on companies to return dividends to shareholders. With this in mind, the key question is whether you are ready to invest in a market characterised by uncertainty and shadows, but equally has a potentially compelling upside?

For the mining industry, the GFC triggered a focus on protecting core assets and cost reduction. This was closely followed by a renewed sense of urgency to ignite growth through investing in major capital projects as prices ticked up. With a surging appetite for commodity supply from China and other industrialising nations, executives throughout the industry re-evaluated project viability and the speed at which they might implement those projects.

The mood within the industry was one of urgency, with many companies anxious about missing the 'commodity pricing window'.

In our view, thinking in these terms – the 'opening and closing of project windows' – is fraught with danger, creating an ideal environment for failure when companies prematurely accelerate capital projects and/or follow a prevailing trend. Before commencing your project, you need to ask yourself are you ready to dig?



Look beyond current market conditions

In addition to current market price signals, there are a myriad of different variables to consider when evaluating a major capital project investment. The following questions should also be explored:

- Is the project on strategy?
- How will we fund it?
- What impact will competing projects have on ours?
- How confident are we that the projected costs are accurate?
- How confident are we on the resource, grades and recoveries?
- How difficult will it be to extract and process ore into saleable product?
- Do we have the skills, systems and processes to bear the investment and completion risk?
- Have the right set of performance incentives been developed?
- Do we fully understand our external dependencies (ie. infrastructure, third party contractors)?
- How can we keep the workforce engaged and working productively in remote areas?
- What impact will government, financiers and regulators have?
- How will the community and media interpret our impact?
- What independent assurance has been obtained?
- What does the project culture feel like?

These answers must be carefully considered and managed throughout the project life cycle. If thought through well, then the project investment opportunity could bring extraordinary returns. If thought through poorly or rushed, then the investment downside has severe financial and reputational consequences. Beyond asking the right questions, project proponents and stakeholders need to be able to differentiate between sound and unsound projects and project development practices.

Asking the right questions and developing a sound project governance process has a much greater impact on total investment returns, compared with trying to time the commodity price cycle.

Risk Management: a critical pillar in capital investment evaluation and delivery

By their nature, capital projects are not part of day-to-day operations. They introduce a heightened level of risk for the organisation. Regardless of whether they are related to the development a new mine, construction of new plant or related infrastructure, or corporate processes or systems, these projects require separate financing, management, governance and assurance.

Consequently, it is important to understand what your risk appetite is across these areas, and to ensure that it is discussed and aligned across the organisation. Equally, it is critical to determine what level of overall risk that the organisation can bear in investment terms, before the organisation is stressed. Taking a final investment decision crystallises a risk profile, and it is a clear external expression of risk appetite.

Risk has many faces and can often be misunderstood or not considered in an integrated or timely fashion.

Each mining company is at a different stage of maturity in managing its operations and capital projects. Some are well positioned due to the historic tenements they hold, the skills and expertise they sustain in-house, or the portfolio diversification benefits they enjoy. In contrast, others may only undertake major capital projects periodically, have limited processes, and may not possess all of the project development skills required in-house. For emerging companies in the mid-tier mining sector, a single project can define the entire organisation and project risk is highly concentrated. Irrespective of which category a company falls in, following

organisation biases and pressing on indiscriminately can lead to poor decision making, organisational value erosion and possibly destruction.

That is where high quality risk and opportunity management can really make a difference.

Good risk management results in good decision making

With a volatile global economic environment, a company's decision to invest in projects accompanied by the necessary flexibility and preparedness to respond to changing market circumstances will prove prudent.

Good risk management processes assess:

- how sound is your Plan A?
- how vigorously have you challenged it?
- how does it stack up against competing alternatives?

In addition, important questions to ask when assessing capital project investment decisions include:

- what are your exit thresholds, your Plan Bs, and your triggers to review strategy and chart a different course if necessary?
- What is the value of changing plans?
- Have you performed a series of 'pre-mortems'?
- Have you evaluated projects under different price environments, and charted different courses of action?

Answering these questions in advance allows organisations to respond more quickly and definitively in a challenging environment. Boards and shareholders can reasonably expect that management has covered these possibilities and documented them in an investment decision support package (ie. the business case). But it's worth checking whether these risks and responses have been reviewed by independent experts? Adopting better practice in this area makes it easier to differentiate between high-risk and low-risk projects. This in turn helps decision-makers, financiers and shareholders to better understand if the potential returns justify the capital requirement, especially under different commodity price scenarios.

Speed vs Precision: have you got the balance right?

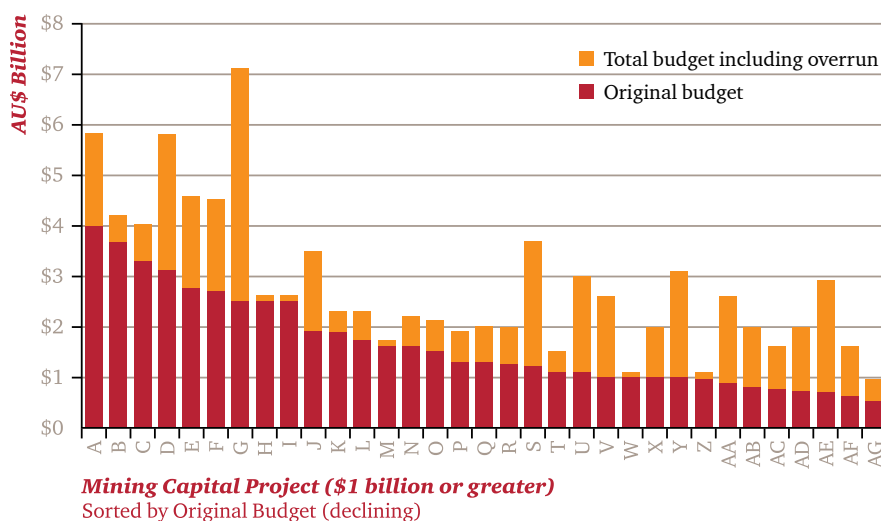
An important theme in evaluating capital investment is whether speed versus precision has been valued in the same way. Overpromising (cost, schedule, quality and operability) is rampant and strongly incentivised. A historical study of 47 megaprojects undertaken between the mid-1960's and 1985 showed that the mining projects in the study exceeded their original budget by 99%, largely for reasons of internal cost growth, not external factors such scope change or unanticipated inflation¹. Sound familiar?

¹ Merrow, E.W. (1988) Understanding the outcomes of mega project: A quantitative analysis of very large civilian projects, Santa Monica, Calif.: The Rand Corporation

These factors are still impacting capital projects today. We considered approximately 50 mining or mining-related infrastructure megaprojects either in feasibility or under construction in Australia. Reviewing the data for approximately 60% of these investments where we have been able to obtain comparative data, shows an average pre-completion overrun of 86% above the original budget. Importantly, 'overrun' refers to realised cost increases during feasibility studies and contracting (obtaining a true cost) and construction (actual + forecast cost realised during execution).

We note that delivering these projects to their mark-to-market cost, as well as to schedule and quality specifications, will be an enormous managerial challenge. Costs are under enormous pressure and an element of overpromising is pervasive. The graph below shows the scale of the challenge.

Mining Mega-Projects in Australia – budget vs forecast or actual cost



Source: PwC Analysis

Are you ready? Why do the projects fail?

Only 2.5% of the companies delivered their projects within the deadline, costs, scope and with benefits expected for the business.

2.5%

Technical problems
Suppliers' failures

4%

4%

8% Directly related to technical aspects

Inappropriate/
inadequate resources

10%

Inappropriate Project
environment

11%

Inappropriate Planning
Monitoring

16%

Lack of clear objectives

20%

Lack of management
(organisational)

38%

92%

Directly related to managerial aspects

Technical and managerial aspects

Data: PwC's Booking Business Performance through Programme and Project Management report.

Are you ready to dig?

In this complex environment, rather than fixate on whether now is the right time to dig, ask yourself “are you ready to dig?”

It is easy to demonstrate that current market conditions and long-term industrialisation trends present a fantastic opportunity for resources companies. In this sense, many mining companies are pro-cyclical and will be appraising major capital projects on this basis. Arguably, the right time to dig is during a downturn, when everyone else is not – securing more favourable contracts with suppliers and preparing for production to come online when the market turns.

Whilst speed to market and price cycles can have a positive influence on project economics, we have gone further to demonstrate how building and sustaining an integrated risk framework can support sound project investment decision-making and delivery outcomes.

You are only ready to dig once your project has been thoroughly tested and challenged through a rigorous front-end loading process; de-risked through a real and connected risk management process that informs corporate decisions, actions and forecasts.

In an environment where over 60% of projects are delivered outside budget, it's critical to consider the pervasiveness of overpromising and the incentives in place that promote this trend. To guard against this, project leadership must be equal to the task of project management. Projects must be governed in a deliberate sense, to counter the emotion and proponent biases with objective and professional scepticism. The desire and energy to develop resources projects must be balanced against the objective realities of building and protecting shareholder value. Senior management and Boards should consider linking executive compensation back to investment project evaluation and delivery outcomes. In our view, CEOs should support share price growth by driving strategy and exercising professional scepticism in equal measures.

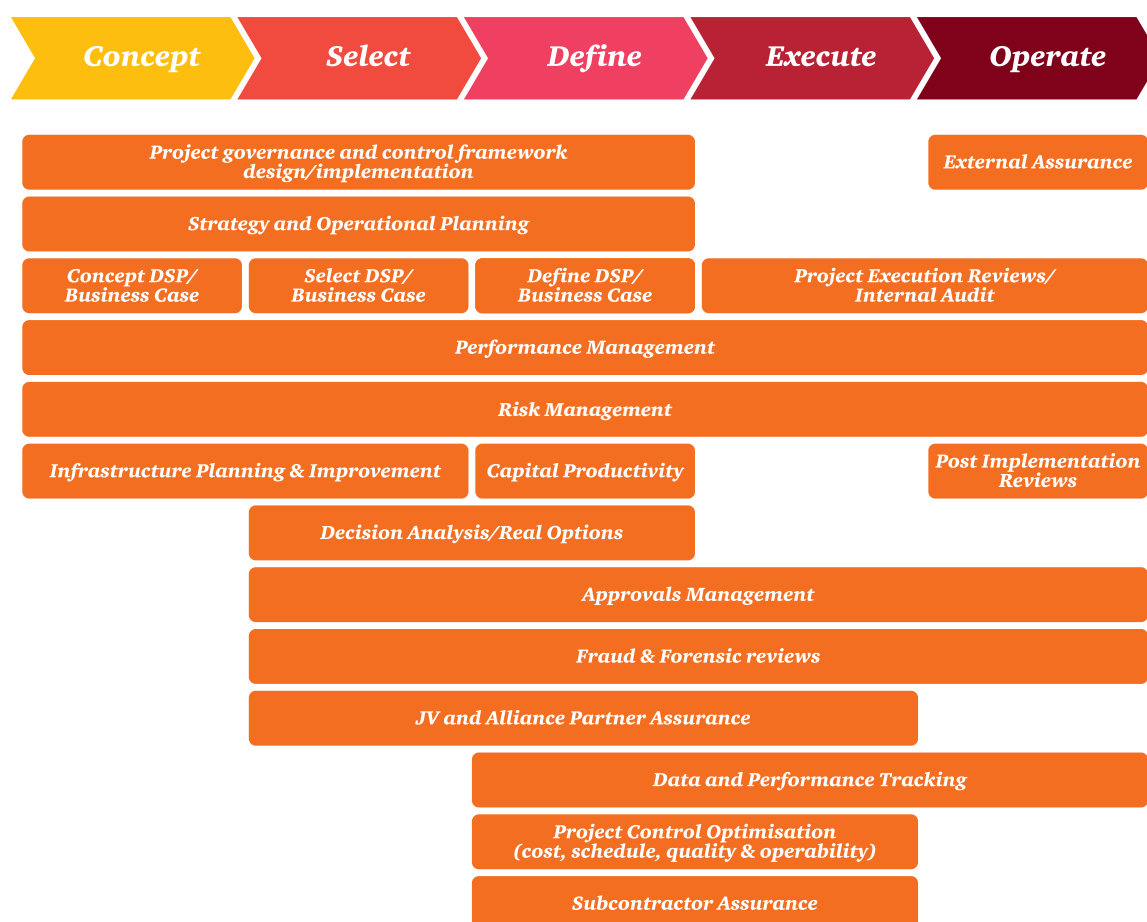
These steps are crucial in preparing a project and delivering value through disciplined investment decisions. Lastly, before sanctioning mining investment projects, to prepare for changes in commodity price and cost environments, it is critically important to ensure that your organisation preserves the flexibility to:

- reduce project costs
- adjust work intensity
- change directions, and
- delay or suspend work.

The project development environment will change one way or the other, and when it does, you will need to be ready. If you are, then you are ready to dig.



PwC Services across the Capital Project Value Chain



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Mining Excellence@PwC

While issues faced by miners across the industry may be similar, we understand that ‘value’ means different things to different people. That’s why at PwC it’s not just about providing the ‘right’ answers. Our team of mining specialists remain focused on relationships to help our clients navigate the complex mining world and deliver on objectives.

We are passionate about mining and have a team of highly skilled professionals exclusively focused on improving efficiency and adding value across the industry.

Mining Excellence@PwC delivers a team of industry experts exclusively focused on the mining sector

In Australia, Mining Excellence@PwC provides our clients:

leading edge knowledge and insight

We have made considerable investments to ensure our people are not only technically strong, but also have strong industry experience and expertise. Also, our industry publications are focused on providing in depth commentary on the key issues being faced by miners in today’s complex operating arena.

Mining Excellence@PwC includes:

- a comprehensive industry insight program:
 - flagship publications such as *Aussie Mine*, *Mine* and *Mining Deals*
 - web casts available at pwc.com.au
 - The *Insight Series* delves into the issues most important to miners



- an extensive industry development program for our people and clients. This features our university-style course called *Hard Hat: The Mining Experience*.



connections to our vast network of mining experts and global client portfolio

We have the widest network of mining experts who work out of strategic hubs across the globe to help better connect you to vital mining markets.

Our connections provide:

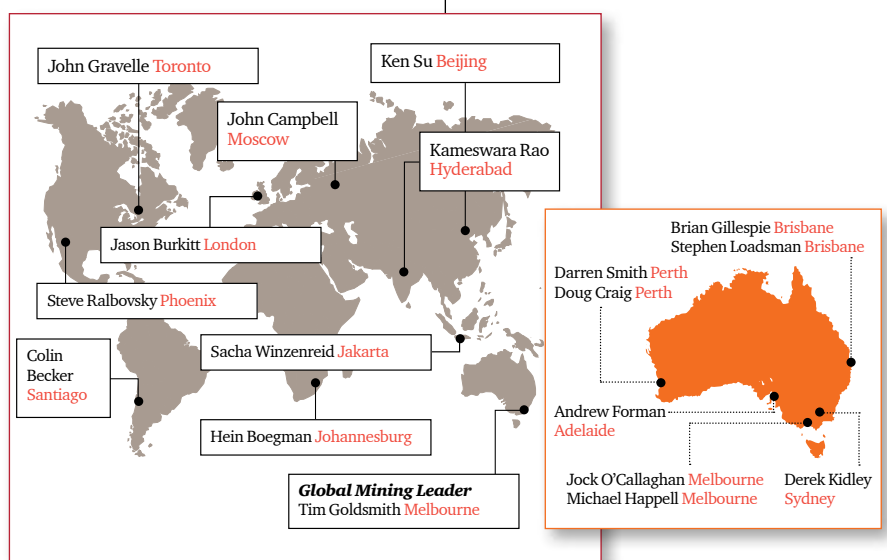
- collaborative cross-border account management, which ensures seamless client service
- a global community of mining leaders, allowing our clients to connect with key players in all markets to maximise deal potential
- a well-connected and mobile workforce.

the delivery of an experience that meets our clients’ definition of ‘value’

With mining experts working in each key Australian state, our award winning teams are helping clients deliver on specific projects and organisational growth aspirations. We offer advisory, tax and audit services to global corporations and locally listed companies.

Mining Excellence@PwC complements this with:

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- a comprehensive client feedback program to ensure we are consistently delivering on individual client needs.



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