

# Managing Expectations – From Buyer Beware to Buyer Be Aware

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## Abstract

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This paper reflects on the author's experiences in undertaking mining studies and reviewing mining projects and technical reports, particularly over the past five years, and the impact of recent changes in reporting standards and listing requirements pertaining to mining-related evaluation and valuation exercises. It also discusses contemporary changes in the expectations of the investment community and the implications for the role of the technical specialist in providing advice to such stakeholders.

Not for the first time in history, the resources industry has experienced a significant downturn after a period of strong, sustained growth in line with the traditional view of the cyclical nature of commodity markets. The resource industry is currently faced with capital austerity in the wake of projects 'failing' (not delivering to expectations). In response, the industry has experienced changes in investment behaviour (slowing of investment) and an increasing regulatory burden as stakeholders seek a greater understanding of mining project risks.

This paper discusses this response and uses case studies to highlight the key learnings (perhaps re-learned) by the industry. It also discusses the challenges faced by technical specialists in communicating the results of technical and valuation studies to the investment community.

As investors seek to take advantage of the current stage in the investment cycle, the key challenge of the technical specialist is to effectively communicate the uncertainty in technical assumptions, risks and opportunities that drive project value.

## Introduction

Between 2012 and 2015, the resources industry experienced a downturn after a period of strong, sustained growth. As the commodity/investment cycle continues over this period, the industry is again experiencing capital austerity in the wake of projects 'failing' (not delivering to expectations). In response, the industry has experienced a slowing of investment, the burden of an increased regulatory environment and an increasing reliance on the regulatory framework and reporting requirements by stakeholders to assess risk. In addition to a softening and increasingly regulated market, investors have also had to accommodate multiple changes to the mineral reporting framework, including the release and implementation of the 2012 JORC Code (JORC, 2012), the 2015 VALMIN Code (VALMIN, 2015) and increased penetration of the highly prescriptive Canadian National Instrument (NI) 43-101 reporting requirements.

These changes have arisen following changes in investor sentiment from the aversion of risk in a greed-driven environment to one of fear (Widdup, 2015), which is perhaps driven by acknowledgement that investments are not well enough understood.

This paper discusses the change in investor sentiment and the role of the technical specialist in appropriately reporting the level of risk and opportunity associated with mining-related investments such that stakeholders can make informed decisions. Case studies are provided to highlight the key learnings (perhaps re-learned) by the industry.

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As investors seek to take advantage of the investment cycle, the key challenge of the technical specialist is to effectively communicate the technical risks/opportunity that drive project value.

If the project risks and uncertainty (technical and financial) are more effectively and continually communicated, a greater depth of understanding will be generated and lead to more consistent and stable investment profiles. This could remove the extremes of the highs and lows of the investment cycle (driven by classical fundamentals such as commodity supply/demand and related metal prices and other macroeconomic factors) that are detrimental to our industry.

The technical specialist, often the only truly independent person in the investment process, is faced with the challenge of effectively communicating to the investor the uncertainty of the project assumptions and its impact on the variability in value.

It is not the author's intention to re-explore the recent boom/bust or the reasons for the 'failure' of projects, or to evaluate the effectiveness of past studies. The objective of this paper is to challenge our ability to manage the perception of failure and the surprises and disappointment of the changes in project outcomes and ultimately achieve smoother investment profiles through all stages of the investment cycle.

## Challenges/Reflections For The Technical Specialist

Much has been written over the years on resources booms and subsequent declines in commodity prices, the flow on effect of reduced capital investment and the slowing of the resources sector. Yet the industry is again faced with project uncertainty, high levels of unemployment (after a period of unprecedented demand), reductions in investment levels (project capital and exploration) and declining investor sentiment due in no small way to the perceived failure of projects (poor investment return) over the last five years.

Stakeholders – investors, regulators and project owners – have responded to this with at times significantly negative commentary on our industry that has lasting effects. Industry professionals and investors will be lost from the industry as confidence and security wanes in the downturn. What can technical specialists do to manage the effect of the commodity price cycle and the resulting highs and lows in investor expectation and sentiment?

Papers will continue to be written about why projects fail to deliver, be it due to purely academic or technical reasons (head grade, recovery), operational performance (construction time/ramp-up) or economics (cost overruns/price forecasts), and it is important that these reasons are understood and incorporated in future studies.

The success and value of a project is driven by many inter-related technical aspects (Warren, 1991; McCarthy, 2013) and assumptions such as:

- geological uncertainty and grade estimation
- geotechnical conditions
- productivity and production rates
- metallurgical characteristics/performance
- social and environmental factors
- basis and accuracy of cost estimates
- forecast commodity prices.

These reasons are many and varied, and it is suggested that they are the same today as in previous cycles. Are our studies failing or are we failing to adequately communicate the technical aspects that drive the results of the studies?

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All models are wrong – some are useful

In recent years, there have been many advances in the technical skills and techniques that have led to improvements in geological models and grade estimation and detail in mining schedules. As a result, a perception of improved accuracy of studies and forecasts has followed. The themes of the previous three Project Evaluation conferences highlighted that we recognise that our answers can be wrong: 2007 – Getting it Right; 2009 – Moving Forward in Challenging Times; 2012 – Dealing with Uncertainty.

So why are our studies not held in higher regard? Do we as technical professionals expect them to be more accurate and precise? What is our role in improving the way our findings are communicated?

## Being Precisely Wrong

As an industry, we are getting better at communicating the technical aspects of our work, but there is still much that can be done. We have all ‘grown up’ with and perhaps unwittingly accepted uncertainty and the inherent risk in our industry. When it comes to project value, we traditionally report a single value defined by project assumptions based on detailed technical studies (implying precision and or accuracy) completed to varying levels of detail and accuracy. This level of uncertainty in the project assumptions is often well known and understood by the technical specialists who understand the variability.

What is the role of the technical specialist in improving the communication of risks associated with these uncertainties and their mitigating strategies and what can/must be done to set and manage the expectations of the stakeholder of this impact on the project economics?

Why don't we work with ranges rather than single values to make investors more aware of the likely changes in value?

## Reporting Requirements and Regulatory Frameworks

Canadian and Australian regulatory bodies have introduced and enforced tighter regulations on reporting standards and disclosure requirements. The Canadian NI 43-101, 2012 JORC Code and 2015 VALMIN Code (collectively known as ‘industry guides’) are all mechanisms that we as an industry should be using to improve the quality of information provided to inform the investor.

In the Australian regulatory environment, the Australian Securities Exchange (ASX) and Australian Securities and Investments Commission (ASIC) have introduced and enforced tighter regulations associated with the public release and reporting of the results of technical and techno-economic studies. Chapters 5 and 19 of the ASX Listing Rules and the ASIC Regulatory Guidelines specifically address the legal requirements for companies listed on the ASX and draw on the industry guides in defining the requirements.

## Reporting requirements

In the author's opinion, the intent of the industry guides is similar in seeking to better inform potential investors, but the way in which they have been applied has resulted in different outcomes. For example, the mandatory filing of NI 43-101 Technical Reports is a positive for transparency, but too often these reports appear to be the Pre-Feasibility Study and Feasibility Study report written for the technical specialist and not as a précis highlighting the material aspects of a project. Furthermore, NI 43-101 Technical Reports are typically increasing in size and technical detail as authors seek to protect themselves from any non-

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compliance and associated personal risks. As a result, the intent of better informing investors has become lost.

The intent of Table 1 and the 'if not, why not' approach outlined in the JORC Code (2012) is a positive advancement from the JORC Code (2004) and is now being embraced by the market and the responsible Competent Person/s. Comments and responses to the relevant sections within Table 1 are becoming more detailed and better address investors' key requirements. The challenge going forward is balancing the use of Table 1 and not using it as a proxy for a technical report, thus losing the focus and burying the material aspects in technical detail and a minimalist response that does not adequately inform the reader.

There has been a recent move by ASX-listed companies to voluntarily publish supporting Pre-Feasibility Study and Feasibility Study reports. This is considered by the author to be a positive step for transparency, but recognises that Table 1 remains an important tool for improving communication relating to the materiality of the underlying assumptions that drive uncertainty.

## Regulatory Framework

In the author's opinion, the increased scrutiny and changes in ASX and ASIC requirements in recent years have, by and large, improved the quality of information made available through public releases. However, at times, these requirements have made it more difficult and prevented organisations from releasing relevant and potentially material information that may entice or stimulate investment. The author considers that ASIC's intent in strengthening the language is sound, but as an industry, we are yet to fully embrace and respond to the challenge of these increased requirements. The changes are particularly relevant for the junior/exploration arm of the industry.

The impact of capital austerity is often hardest felt by the junior end of the industry responsible for many of the significant projects that have been developed over the years. In addition to the tightening of capital spending, it has become more difficult for the juniors to release information about their projects.

Most operations routinely include Inferred Resources in internal mine plans, and investors typically make allowances for assumed conversion of the reported Inferred component of Mineral Resource estimates. Yet the current regulations are somewhat ambiguous (ASX Chapter 5 Section 16) as to whether the potential value of Inferred Resources can be publicly reported. The author understands ASIC's view that the JORC Code states that modifying factors cannot be applied to an Inferred Resource and that, as such, it cannot be used in economic analysis, based on the premise of 'reasonable grounds'.

This leaves the junior with the apparent dilemma of not being able to report results of early-stage project work and raise funds due to the absence of a supporting study, and not being able to complete a study and the required work due to a lack of funds. The tightening of reporting requirements has led to the perception that this information cannot be released. However, this isn't true in all situations.

This dilemma places greater emphasis on confirmation early in the process by the Competent Person as to the ability to provide the supporting technical information with the inclusion of appropriate clarification or 'proximal statements' in support of press releases. The press release has previously been the domain of a company secretary with minimal involvement from the Competent Person. Particular attention is drawn to the definition of forward-looking statements and the lack of a clear definition of 'Reasonable Grounds' (ASIC, 2011). The April 2015 VALMIN exposure draft (VALMIN, 2015) provides further clarity on the tests for 'Reasonableness'. There is a way through the ASIC regulations, but this requires more time and effort to address and will require continued education of what can and cannot be released or, more to the point, the explicit clarification that is needed to support a press release. A detailed discussion on the listing requirements is not within the scope of this paper, but the aim is to draw the reader's attention to these requirements, particularly the premise of 'Reasonable Grounds' and how they should impact the way that the technical findings of studies are reported.

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The potential to report Mineral Resources, Ore Reserves and other relevant information, particularly financial information, at the end of the study phase is important to understand at the start of the process to manage expectations and can also define the required detail at each stage of the project. In recent years, the author and his colleagues have experienced many projects presenting detailed analysis of early-stage technical work. The result is implied certainty/precision in the technical work and the project outcomes. However, contrary to the assumptions and expectation of the project owner, this work is not always able to be publicly reported.

It is important that we as an industry continue to embrace and make the most of the changes in the industry guides and utilise them effectively to help educate the investor as to the likely range of outcomes for a project. Through greater understanding of the likely project outcomes and their associated informed decisions, investors will hopefully be able to make a more stable investment through the commodity cycle. The resulting smoother investment profiles will be beneficial to the industry as whole. It is suggested that the inability to communicate risk has perpetuated the response of fear in the falling market.

Generally, the benefits of a counter cyclical investment strategy are acknowledged but not always adopted, so how can we better inform the investor to maintain a positive sentiment and invest through lows in the cycle?

Exploration Targets, as defined in the JORC Code (2012), must be reported with a range and cautionary statements must be included in the text proximal to the publishing of economic results. In a similar fashion, should we also report ranges for other key inputs and outputs to better inform and educate the investor?

## Investor Response

Until recently, NI 43-101, JORC Code and VALMIN Code compliance were viewed by many investors as implying precision and accuracy, which discouraged detailed scrutiny and understanding of the underlying technical work. In the race to market to take advantage of rising commodity and share prices, investors, particularly those new to the industry, appeared more interested in chasing returns than in understanding the technical risks associated with a mining project investment.

The investment community is now awakening to the fact that the industry guides are merely a reporting standard and compliance does not necessarily imply precision and or accuracy. A 'compliant report' simply means that the technical report adhered to a reporting standard and was prepared by a Competent Person. It does not guarantee the predicted outcomes. In fact, the purpose of the report is to explain the uncertainty and clarify/quantify the risk and opportunities associated with an investment in a mining project.

More investors are looking to investigate beyond code compliance and now seek to better understand the technical basis of mining projects. This is true for investments into publicly listed and private companies, with all investors now seeking to use the codes and standards to underpin and support their decision-making. The author has observed surprise from investors and some project owners following technical reviews revealing the extent of the variability and the resulting range of valuations. This reflects poorly on our industry's ability to convey the inherently variable nature of project evaluation. The quality of the technical work undertaken is largely not in question, but the level of detail in the information being sought prior to an investment decision being made has declined over the past five years. The author questions whether the investor really understood the associated risks and basis of the investment decision or was blinded by the allure of profit in a rising market.

The inevitable response from the investment community in the wake of projects not delivering is one of austerity and fear across the board, but this comes at a time when targeted investment in the industry is needed most. This response is understandable but frustrating for the industry. While some investors may not have wanted to hear about project risks, it is important that these are continually communicated, even in times of rising commodity prices.

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We must recognise the role that technical specialists play in managing (or not) investor expectations and how this contributes to and fosters investor sentiment.

Different types of investors and investment schemes coming to the market bring different risk profiles and, with them, new opportunities and challenges in presenting projects to a changing market. Traditional debt and equity models are now being replaced or supplemented by royalty, streaming and other funding opportunities. Each of these investors has differing risk profiles and time frames. It is not uncommon to see multiple funders and/or funding agreements engaged through the various study phases of a project.

The traditional style of reporting the results of project studies are being replaced by more specific questions to address the risk profile of the particular style of investment. In the newer style of investments, net present value, internal rate of return and Ore Reserve life are less important than securing minimum production levels over specific time frames and repaying capital injections in shorter time frames. In one example, an increase in Ore Reserve life is actively managed as it triggers royalty payments that are a cost to the project owner.

Investors are taking a more active interest in understanding and managing downside risk now that the magnitude of the upside opportunity of rising commodity prices has diminished. A clearer understanding of the risks and how they can be managed and mitigated is an important step in encouraging investors to return to the resource sector.

The author has observed greater and improved use of Table 1 of the JORC Code (2012) to address the questions being raised by potential investors, leading to the opportunity for better informed investment decisions being made. The investor is now more aware and can more easily identify the specific risks that are present and relevant at the particular stage of a project.

## Response of The Technical Professional

The author has observed many parts of the industry become insular and defensive with increased scrutiny and questioning of technical work outcomes. Further, there appears to be a growing perception that not enough is being done to reduce project risk and that we are getting it wrong. Are our reports misleading or is it that we are not communicating the relevant information effectively?

As the Competent Person, it is our responsibility to present the full details that support the results of our work. Rather than becoming defensive, we need to be proactive and better explain (in plain English using layman's terms) the results and the uncertainty in the information that we provide to make investors more aware of the likelihood and consequences of changes to the project.

As technical professionals, we know that there is uncertainty in the technical assumptions and we expect that the outcomes will change and lead to a range in project value. The capital cost estimates or operating cost estimates are likely to change, not to mention the grade of the Mineral Resource and Ore Reserve, yet as an industry we continue to strive for 'the answer'.

The use of Table 1 as per the JORC Code (2012), the language used in support of press releases and awareness of the ASX and ASIC requirements for the release of study results is considered by the author to be a sign that the Competent Person is taking more of an active involvement in contributing to and preparing the relevant documentation. While the quality of the underlying technical work has largely remained the same, improvements are being made in the standard and form of the information being made available to the investor.

We must recognise that a better informed investor will continue to invest in the right projects. There are invariably good projects at all stages of the cycle, and we must be able to present these projects appropriately to provide confidence to the increasingly educated and sophisticated investor such that the risks are understood and reflected in the results of the technical studies.

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## Public Reporting

In a recent press release (January 2015) of results from a Scoping Study, an ASX-listed company published capital and operating cost estimates with a range based on the uncertainty in the underlying technical basis (Table 1). As an industry, we should be encouraged by this response and see it as a positive outcome. It is suggested that this would not have happened five years ago, largely because the appetite for risk was much higher, the prevailing commodity forecast was more aggressive and funds were more readily available.

It is contended that the investor is better informed today and that this form of reporting should continue into the future. While this behaviour may have been driven by regulatory requirements based on the stage of the project, it is proposed that this style of reporting of ranges should be encouraged and applied to projects at all stages and extended to the reporting of Mineral Resources and Ore Reserves. This style of reporting will better inform investors of the range of values a project may deliver, lead to less disappointment from investors and attract investors back as they will be better informed and more aware of project uncertainty.

**TABLE 1**

Table from January 2015 ASX press release.

	Base case 5 Mt/a	7.5 Mt/a option (order of magnitude review)
Project life (years)	11	Between 7 and 8
Stripping ratio (waste:ore)	1.6:1	1.6:1
Gold production (Moz)	2.1	2.1
Annual gold production (avg koz/a)	190	268
Capital cost (A\$M) (base case accuracy -10/+35%)	360	435–480
Mining cost (A\$M) (base case accuracy $\pm$ 30%)	11.50	11.30–11.50
Processing cost (A\$M) (base case accuracy $\pm$ 30%)	19.90	17.70–19.90
Mining dilution (%)	2.5	2.5
Metallurgical recovery (%)	95	95

After reading the information reported in Table 1, the investor should not be surprised if there is a 35 per cent increase in the capital cost of the project. Reporting the full range of values is considered to provide a better indication of the variability and will desensitise the investor to the likely changes in the project. Unfortunately, in the past, many investors have invested early in the project life cycle and not been fully informed of the likely changes or taken the time to inform themselves. This has resulted in the perception that the project has ‘failed’ when the outcomes change as the project matures. However, in reality, the project has performed to the engineering expectations at the original time of reporting.

Can or should the potential range of production scenarios be further explored or summarised?

Reviewing the sensitivity of project assumptions is routinely undertaken for internal technical reviews by larger investors but is not widely reported in the public domain. Effective use of Table 1 of the JORC Code (2012), presenting additional details as shown in Table 1 and making study reports available in the public domain would assist in better informing investors.

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## Key Learnings

### Rush to Market

In the rush to market, projects are fast tracked as capital becomes more readily available and easier to access. This can lead to critical aspects of the basis of the project design being less well studied or understood than perhaps they should be, leading to material impacts on project revenue and subsequent cash flow during the critical start-up phase. Geometallurgy and plant design are two aspects that have become prevalent reasons for project 'failure'.

Attention is placed on resource grade estimation, but, at times, the mineralogy of the deposit is not fully understood prior to the design and construction of the processing plant in the rush to commence production.

In a recent project review, the logic of designing a three-stage crushing circuit assuming three per cent moisture in the ore feed in a tropical setting was not apparent. This was further compounded by the presence of wet clayey ore being delivered from underground. The plant is now sitting idle, having been constructed and 'modified' in attempts to debottleneck (value engineer) that were all but impossible to introduce on an operating plant with a fundamentally flawed design. There were likely to be reasons (corporate expectations, equipment availability and a lack of orebody knowledge) for the design decisions at the time of construction, but they have now contributed to negative sentiment on the project.

The project was the subject of a significant write-down and subsequently sold. It has significant resource and exploration upside, but the new owner is now struggling for funding based on a perception that it is a bad project.

In a second example, a project ultimately failed due to cash flow constraints resulting from poor understanding of the geometallurgical aspects of the resource. The project was largely constructed on time and on budget and the ore grades delivered to the processing plant consistent with the Feasibility Study estimates. The problems arose when the transitional material was thicker and deeper than modelled and contained greater percentages of a deleterious element that dropped recovery from ~85 per cent to ~50 per cent, effectively turning ore into waste. The operational recovery plan was realistic, but challenges in achieving planned productivity from equipment that was new to the region and the only of its kind in the country led to an inability to meet the scheduled production requirements and ultimately meet loan repayments.

The project now sits idle, having been reconfigured and rebranded. The challenge is to explain to investors why there is an Ore Reserve downgrade with a reconfigured project and to renew confidence that the technical and operational aspects have now been effectively addressed.

Was it simply the rush to get into production that led to this problem? What controls can we as technical professionals put in place to prevent this from happening or being repeated?

While more detailed reporting may not have prevented the project from going ahead due to the prevailing economic conditions, it may have made investors more aware of the associated risks and thus managed the negative sentiment that now exists on both projects that is leading to significant challenges in securing funding to restart the project, albeit in a different configuration. The damage has been done.

### Quantity Over Quality

The drive for quantity over quality is a continual challenge for operations to resist in times of high commodity prices. Many projects are now left unfunded and idle, having been advertised as high- volume projects, with



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large resources that come with large (now unfundable) capital costs. Many of these project are now being re-engineered with a focus on quality ore with smaller production targets, as opposed to needing to feed large, hungry mills, while others are scrapped in the current climate. The challenge is to readvertise the smaller projects to potential investors who have been scared away by capital cost blowouts and appease the investors that now have an investment in a project that has a materially different future. The promise of returns from a much smaller project (production rate, Mineral Resource and Ore Reserve) becomes more difficult to market after the project has been portrayed in a different light.

No one likes a Mineral Resource or Ore Reserve downgrade, but to the educated investor, these should be expected and are often required following changes in technical information, commodity prices and cost environments.

By reporting Mineral Resource and Ore Reserve estimates in a range based on an allowance or sensitivity to grade variability, the investor will more fully understand the project. They will be less surprised to see changes in the future and be more accepting of changes in reported results. Can we or should we educate the market to be less fixated on a single point estimate (the 'flaw of averages') to determine project value that subsequently drives share price?

## Economic Considerations

It is important to consider the prevailing economic environment when assuming the basis for the project capital and operating cost and construction time estimates. At times, history or past performance is a good indicator of the future, particularly for production, but this is not always the case for commodity forecasts. Engineers tend to leave the economic analysis and commodity price forecasts to other experts when reporting results from the technical studies being undertaken. More notice should be taken of the prevailing economic environment and the impact that it has on the operating (production and cost) assumptions. In times of rising commodity prices, we should expect cost increases due to a growing demand for labour and consumables and potential delays in construction due to equipment and labour shortages.

A rising trend in commodity prices and forecast profit masks the impact of cost increases and slower project start-up, but the inevitable fall in commodity prices leads to a significant impact on projects if the cost base is not well understood. Inevitably, a squeeze in cash availability due to rising costs and delays in production leads to suboptimal, short-term decisions being made to keep the project advancing and 'staying in the game'.

Time delays due to labour shortages or equipment lead times have a material impact on project economics. Securing agreement for supply of the right equipment is crucial and should be an important aspect of the determination of productivity rates. Seeing the new state-of-the-art jumbo scheduled to achieve best practice productivity sitting idle as a result of a shortage of skilled operators or an absence of the required spare part is a frustrating and costly experience. Reforecasting production at the reduced productivity rate is an even more sobering and, perhaps at times, career-limiting experience. This is particularly so when there is no expectation or contingency for variability in performance and reliance on production cash flow for ongoing funding. Planning for a range in performance would lead to decisions on financial funding that present less risk to future operations.

The reason or excuse for achieving productivity rates less than those proposed in the Feasibility Study is often the mismatch of equipment to what is available at the time and/or the inclusion of best practice productivity rates. It is often forgotten that in the traditional study phases, a Construction and Implementation Stage follows the completion of the Feasibility Study and underlying assumptions will change. Inputs to Feasibility Study estimates (costs and physicals) are typically a  $\pm 10$  per cent order of accuracy, and variations are to be expected. However, traditionally, management and investor/market focus is on a single value point estimate of the Feasibility Study.

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## Conclusion

If project risks and uncertainty (technical and financial) are more effectively and continually communicated, a greater depth of understanding will be generated. This will lead to more consistent and stable investment at all stages of the commodity cycle, which will temper the extreme highs and lows of investor sentiment that is ultimately detrimental to our industry. A greater understanding through the availability of relevant information will clarify the uncertainty and mitigate the 'fear' of the industry.

While the changes in reporting standards have at times been challenging, they are being embraced, and constructive dialogue is occurring between stakeholders to work through the differences in the intent and application of the codes and standards.

In summary, we must regain the trust of the market and investors and put steps in place to make it harder to lose the trust of the investor in the future. Investors now expect and demand greater clarification of the technical work undertaken to truly understand and mitigate project risks that drive value. There is an opportunity for us as technical professionals to utilise the industry guides and lead these changes as opposed to being reactionary to regulations that are introduced.

The author considers that by better and more clearly communicating the technical reasons for the likely range in project values, stakeholders will become more aware of project variability rather than being wary or fearful of project uncertainty.

As an outcome, it is hoped that this will lead to more consistent and smoother levels of investment through all stages of the investment cycle that will assist the stability of the resource sector.

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