The case for exploration

Exploration gets a bad rap. Explorers are carelessly labelled as more risky than companies with a discovery under their belt looking to build a mine.

John Robertson* | 05 Oct 2016 | 22:34 | Opinion

The chances of making a one-off discover are, relatively speaking, quite decent

Investment analysts, financial advisers and even those engaged directly in the mining industry talk as though investment risk varies directly with the stage of development.

Exploration is constantly referred to as the riskiest part of a risky industry. Having a scoping study based on prior exploration results is touted as a less risky investment.

Last week's 'From the Capital' column highlighted the conclusions of psychologists Daniel Kahneman and Amos Tversky about how biases in the way people assess risk lead to inappropriate investment conclusions.

The column drew on Kahneman's Nobel prize winning analysis to show how risks associated with mining development are constantly underestimated. This conclusion rests on the way in which people assess the likelihood of 'conjunctive' events.

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Mining development typically involves a chain of prerequisites or conjunctive events needed to complete a development successfully. Failure at any one point along the sequence renders the whole project valueless.

Statistically, the column likened mining development to drawing consecutive red balls from a bag containing eight red balls and two white balls. The misapprehension of risk arises because people extrapolate the 80% probability of drawing a single red ball to the overall outcome.

In neglecting to correctly measure the chance of drawing seven successive red balls – actually 21% – people overstate the chance of completing the sequence of conjunctive events.

> *"Investors want risk to be minimised but, above all, they prefer to see it clearly identified"*

While project development is a series of conjunctive events, exploration success is disjunctive. Mine development needs everything to go right on every attempt. Exploration, in contrast, needs only one drill hole to hit a target from a potentially large number of attempts.

Exploration is more like drawing just one white ball in seven attempts from the bag of eight red and two white balls.

Former Sirius Resources chief executive Mark Bennett has described the Nova nickel discovery in 2012, perhaps the most successful Australian exploration effort of the last cycle, as "the last roll of the dice" after a long period in the field and with little remaining cash to sustain the effort.

As with all meaningful exploration results, success for Sirius came through the accumulation of information from government, other companies and the earlier work of geologists. Without a strong analytical underpinning and judgements based on experience, a discovery would not have been possible but there were many potential routes to success.

Going back to the red and white ball analogy, Bennett did not have to find a white ball on every attempt, to prove his point. He simply had to find a single white ball in multiple attempts.

The probability of drawing a single white ball from seven attempts rises to 79% even when the chance of drawing a white ball on any single occasion is a low 20%.

The tendency to draw incorrect inferences about the likelihood of success results in exploration risk being overestimated and, consequently, lower prices for exploration outcomes relative to other activities in the sector.

In presenting to investors last week, Thundelarra chief executive Tony Lofthouse provided another example of the disjunctive nature of mineral exploration. He described the company's drilling at its Red Bore site in Western Australia as akin to hitting a plate from a height on one of the tables at which the audience was sitting. Lofthouse said he knew the location of the table. Exploration success now depended on hitting the plate.

Only one of his multiple future attempts will need to be successful to have engineered a discovery capable of commercial development.

Investor fatigue is the current predicament facing Thundelarra, with Lofthouse at pains to persuade disappointed sellers that they should display more confidence in the outcome of the company's exploration priorities.

Larger investors who often refer to their ability to deploy hundreds of millions of dollars on a few projects may also eschew exploration due to its relatively small capital needs. For them, investment returns are not the sole objective. They are being paid for the volume of funds deployed and not solely for the quality of returns.

Investment size aside, the most logical sector portfolio will comprise a higher proportion of disjunctive events and a lower proportion than generally thought desirable of conjunctive events.

Exploration companies, themselves, could be their own worst enemies in achieving a makeover in the way they are viewed.

Explorers do not frame their investment propositions in this probabilistic way to assist an understanding of risk when they are pitching for capital. It is not something they are used to doing but preventing them from abandoning the conventional wisdom is also a deep-seated conflict of interest.

Explorers too often see themselves as mine developers leaving them loath to acknowledge to investors their own future set of highly risky conjunctive events. They are now suffering the consequences of this ambivalence about their roles.

Explicit recognition of relative risk profiles is becoming more important as structural changes in the financial markets confer more power on 'gatekeepers'.

These financial advisers and their powerful compliance officers play an increasingly prominent role in deciding where funds can flow in equity markets.

As long as these investment gatekeepers believe exploration is too risky for their clients or have insufficient information to make an independent assessment, the industry will be blocked from a vital pool of funds.

Investors want risk to be minimised but, above all, they prefer to see it clearly identified.

That is why the financial market rating products of Fitch, Moody's and S&P are so widely adopted.

Exploration investments, like low grade debt, may still have a place in investment markets if the risks can be better quantified and managed.

More explicit, honest and considered identification of risk would help enhance the investment appeal of many currently neglected explorers.

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