SEG 100 Conference: Celebrating a Century of Discovery

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Global exploration trends

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Historically, industry success has been tied to spend, albeit with the gratification of discovery lagging investment by several years. From 1994-2008 there appeared to be a direct relationship between spend and discovery success, but in the period following the Global Financial Crisis when the industry ramped up spending again, there were fewer discoveries. The diminishing performance and the increasing degree of difficulty of new discoveries may be attributed to industry consolidation, access challenges, decreasing grades, exploring at depth and under-cover, as well as the changing geopolitical environment. Everything “easy” to find has probably already been found. What is not well understood is the lag in the performance. Many of the discoveries in the early-mid 2000s came from work done in the prior decade. Based on this and the peak in funding levels seen in 2012, the industry should now be seeing a solid pipeline of early stage projects starting to emerge. However, this trend seems elusive with increased exploration spend not translating into a steady stream of quality discoveries. The critical question is how will we address these challenges? For mature exploration terrains the challenges are not only the over-explored ground but also post mineral cover and over-staked land. Even today, with all the tools at our fingertips, we struggle to explore through even a few meters of post mineral cover. This will require changes in the future with out-of-the box thinking.

We need to better understand and manage the risks of working in complex and underexplored terrains. Grassroots opportunities are now overwhelmingly in jurisdictions with high geopolitical risk and this may have played a role in the progressively decreasing exploration budgets in this space. Some companies willing to take the risk in these jurisdictions would benefit from the early entry and access to underexplored opportunities. Others will potentially pay the price of their mineral rights being taken away or get stuck trying to navigate through inadequate mining laws and corrupt practices.

While the majors have maintained dominance in global exploration spend over the last several years, juniors have been a close second with almost 90% of their spend dedicated to greenfield targets. Mergers and acquisitions, however, have changed the exploration landscape. In recent years, the industry saw diminishing competition and participation from mid-tiers while Chinese companies have entered the market with fresh new strategies for resource acquisition and exploration.

We need to challenge norms and the status quo, embrace new technology and advanced data analytics. The combination of highly motivated and skilled exploration geologists with access to excellent data and analytical tools creates explorers with a hunger for success. Future geoscientists will have to navigate through a complex, data saturated environment, with targets and patterns often invisible to the human eye, where machine learning and data analytics play an increasingly important role in target generation and resource evaluation.

The mineral resource sector is facing more pressure to deliver better ESG performance and with exploration being in the frontlines, it is slated to play a significant role in this space. This requires a strong focus on safety and environment to manage the unique challenges in maintaining tenure as well as genuine and transparent community engagement.