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Strategic thinking about long-term 'above ground' orebody complexity using scenarios

J P Sykes¹²³⁴, A Trench⁵⁶⁷, T C McCuaig⁸⁹, M Jessell¹⁰, and T Craske¹¹

1. MAusIMM, PhD Candidate, Centre for Exploration Targeting, School of Earth Sciences, The University of Western Australia, Perth, WA 6009.
2. Casual Lecturer, Business School, The University of Western Australia, Perth, WA 6009.
3. Strategist, MinEx Consulting Pty Ltd, Melbourne, VIC 3141.
4. Director, Greenfields Research Ltd, Harrogate, North Yorkshire, HG3 3HA, UK.
5. FAusIMM, Professor of Practice & MBA Director, Business School, The University of Western Australia, Perth, WA 6009.
6. Professor (Risk & Value), Centre for Exploration Targeting, School of Earth Sciences, The University of Western Australia, Perth, WA 6009.
7. Associate Consultant, CRU Group, London, WC2A 1QS, UK.
8. MAusIMM, Principal Geoscientist, BHP Geoscience Centre of Excellence, Perth, WA 6000.
9. Honorary Fellow, Centre for Exploration Targeting, School of Earth Sciences, The University of Western Australia, Perth, WA 6009.
10. Winthrop Professor / WA Fellow, Centre for Exploration Targeting, School of Earth Sciences, The University of Western Australia, Perth, WA 6009.
11. Director & Principal Consultant, Thinkercafé and Geowisdom, Perth, WA 6143.

ABSTRACT

The 'in ground' complexity of an orebody is nothing compared to the 'above-ground' complexity which involves interlocking unpredictable and undefinable socio-political, geopolitical, environmental, economic and technological challenges, in addition to the inherent 'in ground' geological complexity, especially when considered over the long time frames of discovery and development, or life-of-mine operation. Such complexity defies traditional rational, analytical and quantitative strategic planning methods. Scenario planning is a commonly used tool for strategic planning in such situations, however, 'scenarios' are very common, and to outsiders, it is often not clear what scenario planning is and the advantages (and disadvantages) it offers. This paper outlines several different methodologies of the Oxford University / Shell qualitative, plausibilistic scenario planning approach and their use in understanding the future of mining and exploration. These include deductive, inductive, abductive, adaptive, generative, transformative and synthesising scenario planning techniques. The strategic challenges addressed include innovation, the mining cycle, the energy transition, social licence to operate, sustainable development and de-globalisation. In addition to providing strategic insights on these complex issues, the paper provides a 'strategic thinking' framework including synthetic, divergent, parallel, lateral, creative, convergent and analytical thinking techniques for better strategic planning around complex issues.