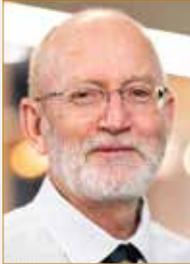




## ESG and finding tools to help 'think about things differently'



I have always been fascinated by how things work, and my mother often commented that I got more pleasure from pulling my toys apart and rebuilding them than from playing with them. Learning, or should I say 'trying to understand how things work, why they work, and then how to do it differently' is an ongoing passion for me. The Why, How and What If may have driven my family crazy at times but they are questions that have shaped my life.

A key learning has been that if you look at a problem the same way (with the same biases!) you are likely to come up with the same solution (or perhaps a slight variant). So, to find a new solution you must look at a problem differently, from an alternative perspective. This needs to be a conscious, intentional process requiring others' perspectives, experiences, and competencies - not just your own. Another learning is that to solve challenges we need a thinking framework, a logic construct - a 'tool'. It has been said that a key evolutionary step in the journey to being Homo Sapiens was the use of tools. My grandchildren tease me, as I so often say to them, 'The most powerful part of your body is your brain - use it first'.

Currently I am on a journey to better understand how we could, as an industry, move from seeing ESG (environmental, social, governance) as a burden, to being a strategic enabler by changing the 'how I see the problem' to be able to create a new solution; while the 'tool' that I'm finding most useful is that of systems thinking, specifically complex adaptive systems and industrial ecology.

Moving into a little bit of theory: complex systems are systems, comprising multiple parts that may interact and whose behaviour is intrinsically difficult to model due to the dependencies, competition, relationships, or other types of interactions between their parts or between a given system and its environment over both time and location. Systems that are 'complex' have distinct properties that arise from these relationships that lead to collective behaviours and how the system interacts and forms relationships with its environment. Complex systems can be understood as an alternative paradigm to reductionism, which attempts to explain systems in terms of their constituent parts and the individual interactions between them. An adaptive system, or complex adaptive system, is a special case of complex systems, which can adapt its behaviour according to changes in its environment or in parts of the system itself. In this way, the system can improve its performance through a continuing interaction with its environment over time.

Industrial ecology is the study of systemic relationships between society, the economy, and the natural environment. It focuses on the use of technology to reduce environmental impacts and reconcile human development with environmental stewardship while recognizing the importance of socioeconomic factors in achieving these goals viz. sustainability, which is the goal of ESG.

So, I've come to a simple but profound realization: that critical shift in perspective that reshapes the pool of possible solutions. We must acknowledge that mining is a complex adaptive system, an industrial ecology, with both a temporal and spatial impact on society, environment and economy, if we are to achieve industry sustainability for the generations to come.

The thought I would like to leave you with is that I firmly believe that we as professionals should revisit our business strategies based on an industrial ecology logic and build solutions that consider the interacting components as parts of a complex adaptive system, to develop sustainability and obtain enduring social licence to operate.

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