

A PROBLEM SHARED IS A PROBLEM HALVED?



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Maral Bayaraa travels down under to find out what a volcanologist, medic, geophysicist, geologist, forensic scientist and Earth/Remote Sensing expert have in common

The days of the lone genius are long gone. In my view, this is a hyper-individualistic ideal that overlooks the influence that sociohistorical events play in scientific innovation. Instead, we need to recognise the global nature of our challenges and approach them with a multidisciplinary, multinational and collaborative spirit. Recently, I travelled to Fremantle, Australia, to attend a workshop that pushed this approach to its limits.

Regular Technology Open Forums are hosted by the mining giant Anglo-American (AA), where they unpack different stages of their mining lifecycle to see how they could approach mining differently - more environmentally friendly, smarter, more efficiently and with less wasted precious resources such as water. This recent workshop was a cross-fertilization of experts from the space industry, medicine, forensics and all the different shades of geoscientists.

So, what does a volcanologist have in common with a medic? A geophysicist with a space/remote sensing scientist? And geologists with forensic scientists? (no, this isn't the set up to a bad joke). When we strip challenges down to their first principles, it is often the same fundamental problem, and more often than you may think, these have already been creatively addressed in other industries.

Cross-fertilization of experts

The tone of the workshop was set by the first speaker – a volcanologist took us back in time millions of years; back through the geological evolution that underpins the creation of ore deposits. He described the challenge of how these ore deposits are now hidden below thick blankets of soil, rock and vegetation. This challenge has direct parallels in medicine and where diagnostics are used to uncover deeply-hidden symptoms. Once we understand the challenge of hidden ore deposits, the next question is where to search for them? Even if an area is geologically suitable for the formation of certain ores, it may still be barren of valuable metals.

Next, a geochemist led us through the details of the barren vs 'fertile' deposit concepts that help narrow down the exploration search area. However, even once we have identified an area to deploy our sensors, we face the challenge of decoding the 'encrypted voice of the orebody'. Once again, when presented with a multitude of different data sources, how do we begin to make sense of them? The answers to this series of questions were summed poetically by the geophysicist with whom I was paired. 'All the geosciences playing their role, like a well-tuned symphony'.

This same need to distinguish signals from noise is tackled in the space industry by companies such as OceanMind that use satellite technology, aided by latest machine learning tools, to help even the most resource-poor governments protect their territorial waters against illegal fishing.

Challenging the status quo

The success of this workshop is evidenced by the fact that it is the eighth to date, and Anglo American can point to numerous projects that are making a demonstrable difference to productivity and, in so doing, challenging the mining *status quo*.

In our highly unpredictable and fast-paced world, it is nice to see that we need each other more than anything else, and a reminder to leave our siloed environments and embrace diversity. Diversity in discipline, age, nationality and gender.

Now, think carefully: are your problems uniquely your own? Could your insights be a part of someone else's solution? And might someone else hold the key to your biggest challenge?

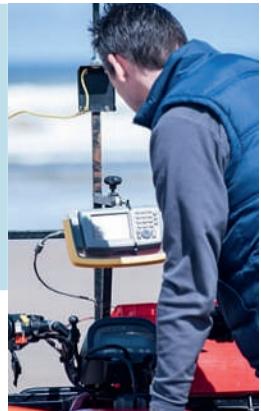


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