Fish don’t know they’re swimming in water

written by Peter Clausi | June 6, 2025

I was at the Big Data conference at the Sheraton Hotel near the airport in Toronto. It was fairly well attended, with roughly 300 attendees.

Big Data has become synonymous with artificial intelligence, so every booth was marketing a different approach to AI. From startups to large companies like Rocket Companies, Inc. (NYSE: RKT), each booth had a different revenue plan.

AI is not new. I remember dealing with neural nets during the great internet boom of the late 1990s. What is new is the speed at which the hardware can process the data, resulting in greater processing capabilities.

That hardware is broadly called ‘semiconductors’. Gallium, primarily as gallium arsenide and gallium nitride, is essential for these semiconductors. There are no viable alternatives. Without gallium, the electronics industry cannot build new semiconductors.

I made a point of chatting at each booth about their products or service offering, the future, the Stanley Cup finals, and the usual chit chat. I also made a point of dropping gallium into each conversation.

Very few of the people at the tech conference knew that gallium appeared on the periodic table (number 31), let alone that we’re facing a global shortage. That shortage results from China, which controls 90 to 98% of the world’s gallium, imposing an export ban in December 2024 as part of the global tit-for-tat

trade wars and battle for global dominance.

That ban will have a direct and severe impact upon the creation of new semiconductors, causing choke points in the AI industry. Every vendor at that Big Data conference could see its revenue plummet if there is a severe shortage of new semiconductors. A study from 2023 tried to guesstimate the impact a Chinese total gallium ban would have just on the United States: the answer was a decrease in GDP of $3.4 billion.

But no one at the conference knew. No one has a backup plan. **No one is derisking the problem because they don't know it exists.**

This is partially a failure of the conference organizers, who appear to have had blinders on when setting the agenda. Successful conferences look at topics from a variety of perspectives, and even one session on the vital role of critical minerals in Big Data would have been enlightening for most of the crowd.

Part of the blame rests with elected officials who only think one election cycle out. Governments should back continuous, broader awareness for the general public as to the necessity for critical minerals and how the public can support the mining industry, from exploration to development to production to recycling.

The media gets its share of the blame, as there is very little astute commentary on the critical mineral shortage and what it means for the average person. This is more than battling climate change, this is a massive social shift through the Green Revolution, and more media coverage is needed to explain what the Green Revolution is and what its impacts will be. This is for mainstream media, not the niche.

And finally, anyone reading this gets part of the blame as well.

Don’t read this and put it away. Share it with other people in your life. Be an evangelist for the support of the critical mineral industry. If we can’t make mining sexy, we can at least make it relevant.

The fish doesn’t know it’s in water.