

ANNUAL SURVEY OF TECHNOLOGICAL TRANSFORMATION IN THE MINING & MINERALS EXPLORATION INDUSTRY, 2023

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ABSTRACT (USE 'HEADING 1' STYLE)

The world's mineral resource industry appears to have two very crucial needs. One, a technology and the other, economic.

Both major and critical minerals are desperately required if the world is to achieve the net-zero emissions goal set by the Paris Agreement for 2050.

To meet this unprecedented demand, where should the pursuit of mineral technological excellence focus?

PX4 Software undertook the “Annual Survey of Technological Transformation in the Exploration Industry”.

From this survey, we have helped to define eight major categories of exploration technologies.

Notably, the most transformative of these technologies over the past 65 years falls into the Geophysical Methodology and Data Storage and Analysis categories. However, all of those surveyed identified technologies that have had a profound impact on the industry.

Moreover, the survey reveals that future transformative technologies are expected to centre on the automation of existing processes through Machine Learning techniques, again in the Data Storage and Analysis category. Transformative technologies that are expected to help facilitate the identification of critical mineral systems.

The survey also brought to light two very crucial requirements required to help meet the demand for critical minerals. Firstly, there is a pressing need for transformative technology capable of locating mineral systems at depths as great as 2km, with a particular emphasis on copper. Secondly, there is an economic essential. There is a worldwide need for a more consistent flow of funding towards the activities of the junior

exploration companies. The boom or bust scenario is not providing long term consistency in exploration efforts and activities.

To achieve the emission reduction targets outlined in the Paris Agreement, there is no doubt we need to develop cutting-edge technologies. And thus the worlds exploration and mining companies should seriously consider seeking strategic partnerships with the world's major technology firms.