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A cross-functional value chain approach to geospatial information: a guide to practice for the minerals industry

Livingstone-Blevins, Michael Gordon

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ABSTRACT

Reproducing a mining project life-cycle in the form of a value chain, from exploration to mine closure, provides a graphical representation of the interdependencies between functions or activities, both upstream and downstream of a particular process. This can be used to develop the concept of geospatial context, i.e. high-level situational awareness. By understanding and responding to geospatial context, geospatial information can be enhanced in direct support of investment decisions and/or operational control.

The risk of deficient geospatial information requires effective mitigation and management throughout the full life-cycle of a project, starting with exploration where the geospatial foundation is laid for all work which follows. Therefore, geospatial information is a primary, not secondary consideration at the commencement of a project.

The role of mine surveying in protecting the surface and workings of a mine, through the provision of accurate maps, plans and associated geospatial records, protects people and the asset, spanning mine and public safety. Additionally, measuring, monitoring, reconciling and reporting key performance indicators which drive value, enables value creation through improved foresight, efficiency and effectiveness.

This dissertation discusses the critical role of geospatial information in risk mitigation and business performance monitoring, with specific reference to the interdependencies between functions such as exploration, mining, processing, environmental protection and mine closure. The value potential is significant.