

Value-in-use modelling

VBKOM offers various services to the mining industry, ranging from specific equipment to overall mining system requirements, mine plans and development from concept through to mine closure plans.

In collaboration with experienced associates, we deliver a comprehensive range of services. VBKOM's metallurgical consulting services focus on optimising the extraction of minerals, identifying niche markets and supplying independent, fit-for-purpose solutions to maximise value for the client.

Experience has taught us that a holistic approach is needed to assist clients in developing new ventures and enhance the success of existing operations. Our expert teams are well-versed in all phases of project development; from initial project planning to product delivery.

The VBKOM metallurgical team understands that more value can be unlocked by engaging with the customers concerning the unique ore qualities and contributions to the downstream processes where the ore is utilised.

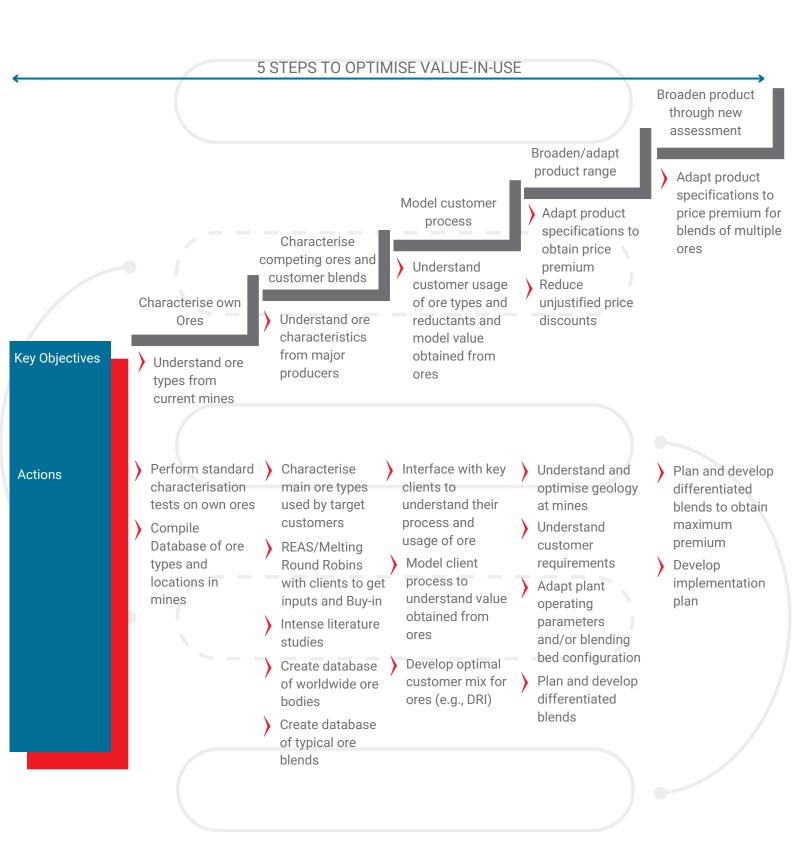








Our Approach to Value-in-use

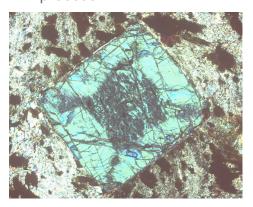


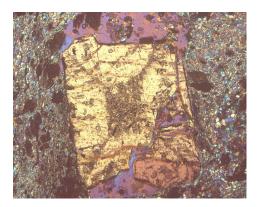


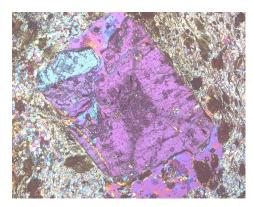
Specialization

VBKOM's expert metallurgical team, empowered by our network of experienced associates, offers a comprehensive suite of services:

- Titanium-metal extraction
- Ironmaking, especially blast furnace and Corex
- Gas-based Direct Reduction
- Coal-based Direct reduction
- Ilmenite and Platinum smelting expertise
- Smelting of copper converter slag and liquid separation of white and red metal
- VIU spreadsheet model (The model includes coke-making, sinter-plant, blast furnace, hot metal desulphurization and basic oxygen furnace as well as all raw materials and interconnections between these processes.)
- Coal, coke and iron ore properties as well as metallurgical testing
- Coke-making, including energy-recovery coke-making
- Mass and energy balance modelling involving several processes (apart from that included in the Oxygen Steelmaking Value-in-Use model):
 - Pulverized coal power station;
 - Semi-coke/Char manufacturing in a retort;
 - Energy-recovery coke-making;
 - Blast furnace;
 - Corex:
 - Underground coal gasification;
 - Certain novel processes ideas.
- Steelmaking expertise and simulation of steelmaking processes
- Application of FACTSAGE thermochemical software and neural network methodology in the development of the model.
- **)** Development of Outotec's Aussmelt technology to develop a novel integrated iron/steelmaking process.







Mineral Resource Estimation | Exploration and Geological Services | Mining Engineering | Metallurgical Engineering | Industrial Engineering | Project Management and -Support



Our Value Proposition

VBKOM is a provider of innovative business and technical consulting services and solutions for the mining and capital-intensive industries. We challenge ourselves to apply fresh thinking and to utilise our experience and technology in pioneering new ways to deliver forward-thinking solutions.

We offer complete multi-disciplinary economic studies for blue-chip mining houses, junior miners and financial institutions across the full range of mineral commodities. Due to VBKOM's diverse pool of expertise, we can offer our clients specialised skills within a one-stop-shop culture. Our engineering, risk, and project management capabilities as well as simulation and decision support expertise, make us an ideal partner to the mining, petrochemical, agricultural, and construction industries.

Our focus on long-term client relationships combined with our technical skills ensures that our clients can fully optimise their value chain.

At VBKOM the quality of our work is guided by a simple philosophy – our success is driven only by the success of our clients and the achievement of our professionals. By using cutting-edge technology and the most advanced computer modelling systems on the market our technical expertise comes unrivalled. Our capacity and continuity have earned us the trust of some of the world's most prestigious mineral resource companies. By staying true to our core values; by utilizing our vast project-specific experience and qualifications; along with applying proven world-class methodologies and processes the VBKOM team is a dynamic, flexible and innovative team with a track record standing as solid proof of our competitive edge in our field.

VBKOM has been successful in providing solutions of an independent nature to a range of clients in the mining industry. Our consultants have developed a good understanding of the needs and opportunities of both open pit and underground studies and operations and we look forward to adding value to your company. We believe that independent consultants can provide optimal solutions to the Client without any risk of providing a solution with an inherent conflict of interest. The VBKOM strategy is to form part of the owner's team to define and protect the owner's interest within our area of influence and control. VBKOM is committed to adding value to each client through innovative, practical, and trustworthy engineering solutions.

