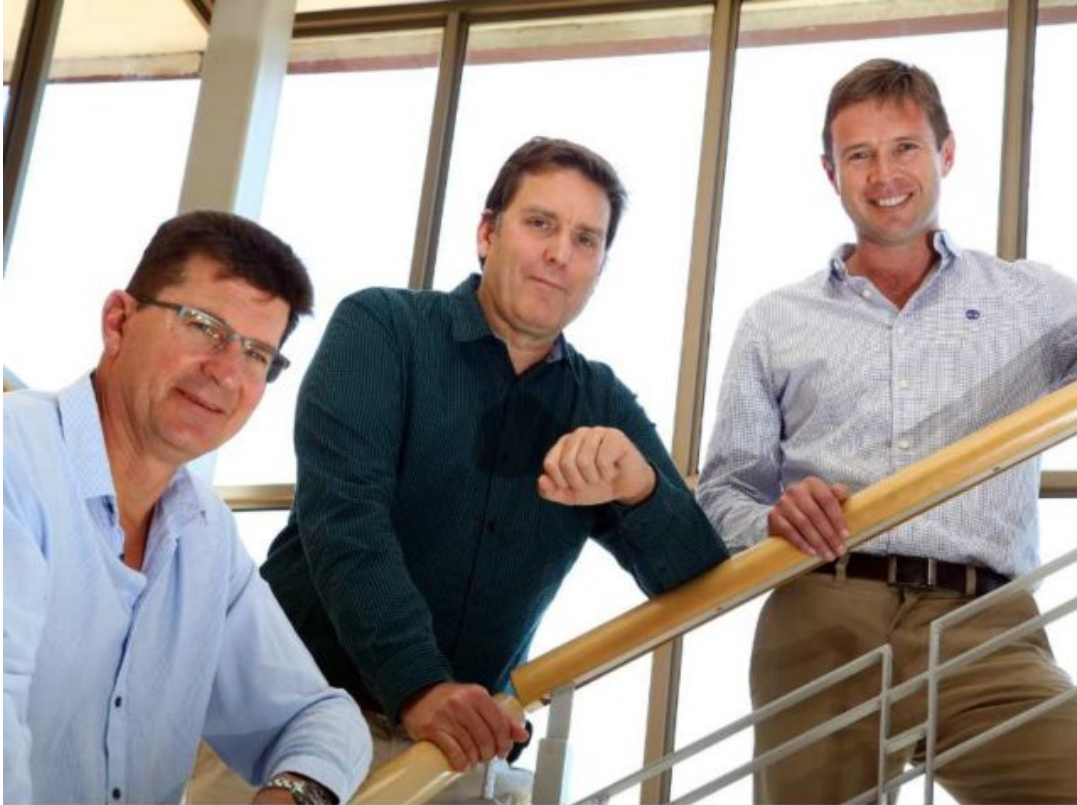


SRK Consulting: Innovating where disciplines intersect

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SRK team (left to right) Marcin Wertz, partner and principal mining engineer; William Joughin, chairman, partner and principal mining geotechnical engineer; Andrew van Zyl, partner and principal consultant

Taking innovation into mining across Africa, SRK Consulting continues to embrace the best technologies from outside mining – even from industries as far removed as gaming.

The aim is simple: to help move mining clients down the cost curve.

At the core of many recent innovations is the digital revolution – which mining companies want to leverage toward bottom-line improvements, according to William Joughin, chairman, partner and principal mining geotechnical engineer at SRK Consulting (SA).

“In a digitally connected world, we can make use of smart devices – mobile phones and tablets – as tools for collecting and sharing mapping data, for instance,” says Joughin.

“At the same time, gaming innovations in visualisation and virtual reality feed progress in modelling, planning, training and other aspects of the

industry.”

By actively promoting discovery and innovation throughout its global, independent network of engineers and scientists, SRK remains at the cutting edge of turning interesting inventions into valuable applications.

“We have used drones and photogrammetry for mapping geological structures, for example, giving us a better understanding of the geology and more reliable resource definition,” he says.

In its own Global Innovation Competition, SRK recently chose senior consultant in Geographic Information Systems (GIS) Jason Beltran as the winner.

By leveraging a customised in-house mapping portal using ArcGIS technology, Beltran has enabled anyone within the organisation to create their own maps via the web; this aids in decision-making without having to wait for the GIS team to construct the map.

SRK Consulting (SA) partner and principal mining engineer Marcin Wertz highlights that GIS is among the key focus areas for SRK’s ongoing innovation drive; the company’s specialists from across SRK country practices regularly attend conferences and internal workshops – looking at issues like Mobile GIS, ArcGIS Pro, data management and data resources, Portal for ArcGIS and ArcGIS Online.

“These ongoing engagements reveal improvements in GIS technology that benefit our own efficiency and productivity – and which can also be shared with our clients,” says Wertz.

There is growing value in the collection, management and computer analysis of big data in improving both strategic and engineering decisions in mining.

“Through using drones and high-definition photography, we gather greater volumes of very accurate data relating to slopes in an opencast mine, for instance,” he says.

“This data leads to better interpretation of geological structures, which in turn helps mines manage geo-technical risks such as slope stability.”

SRK has always adapted technologies to create better ways of solving challenges and improving sustainability.

In another recent example, its professionals were able to find a more effective solution for tailings dam seepage, without the need for a costly liner. It becomes clear, therefore, that much innovation occurs at the boundaries of disciplines, says Wertz.

“As a multi-disciplinary organisation, SRK strives to bridge the gaps between disciplines to apply often unrelated technology in very valuable ways,” he says.

“It also means that our integrated solutions contribute to the bigger picture by positively affecting all aspects of the mining operation – not just the discipline or silo in which it was developed.”

These lessons make their way into SRK’s range of projects throughout Africa – where the business is strategically focused on expanding its presence in East African and West African countries.

“An important part of our capacity is the blend of institutional memory and technological exploration,” says Wertz.

“Our business culture values, retains and develops expertise over long periods, creating an environment in which experienced professionals can enable other innovators – often younger and more tech-savvy – to fine-tune the relevance of their ongoing discoveries to the real challenges mines want to solve.”

According to Andrew van Zyl, partner and principal consultant at SRK Consulting (SA), the firm’s professionals are judged not solely on their financial productivity, but on innovative ideas that can be further developed.

“Recent entries in our Global Innovation Competition have included blasting-induced liquefaction, microbes in tailings and macro-based geotechnical logging,” says Van Zyl.

“We also use ‘hackathons’ – where computer programmers collaborate on software projects with other experts – to develop ideas into useful programs or apps.”

It’s no secret that a key point of resistance to new technologies is the inherent risk that any change embodies; this applies as much to mining as it does in any sector.

“In the latest wave of technological advancement – the digital or ‘cyber’ revolution – this risk has taken on previously unimaginable dimensions, from relatively benign software glitches to criminal ransomware and state-sponsored cyber-warfare,” he says.

For innovation to work, it must be relevant, contextualised and risk-managed – whether such innovation includes technology or not, he emphasised.

“Perhaps the most important advances in South Africa’s mining sector in recent decades, for instance, have come from the fields of health and safety, as well as the more effective management of environmental and

social impact,” says Van Zyl.

“While some new technologies have contributed to the welcome evolution of the sector in this regard, much of the progress has resulted from changes in attitudes, approach and regulation.”

Joughin concludes that it is clear the digital age holds great opportunities for mining companies to reduce risk and improve safety and profitability.

“However, this technological innovation needs to be rooted in professional industry experience which can independently assess, guide and implement its application,” he says.

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Guest Contributor

