

# Making the Most of Smart Tools for Intelligent Results



Why do some organisations seem so much smarter than others? Why are some companies able to navigate the uncertain currents of the world around them and handle the inherent vagaries of geology and mining practically, and others are not? In this column Chris Green, leader of strategic innovation at Maptek, concludes that smart tools do not automatically lead to more intelligent results, and he provides some suggestions for how to make the most of them.

On the one hand, there are companies making huge profits while running on a tech-enabled model in which most operational decisions are made by machines. On the other, there are organisations full of clever people and expensive technology that act in self-destructive ways. Consider the financial institutions that spent vast sums on information technologies, yet failed to understand their data – or understood the data, but not what lay behind it – and hence took the world to the brink of economic disaster.

Intelligence and automation technology are forcing mining companies across the world to rethink and retool nearly everything they do. The business opportunities of automation technology are potentially limitless, but will require radically new strategies and structures. Some of the answers can be found in the new field of collective intelligence that has emerged over the past few years.

## Group thinking

Gerry Stahl, author of the book titled *Group Cognition*, explores what kind of thinking works best to achieve meaningful human activity. “It is important to take the group, rather than the individual, as the unit of analysis,” he argues. He concludes that the emergence of shared group cognition is the holy grail of cooperative knowledge work and [collaborative learning](#).

In *Big Mind*, Geoff Mulgan says that [smarter outcomes do not happen automatically](#); they must be carefully orchestrated to foster dramatic jumps in group intelligence. The properties of a group “far exceed the capabilities of any one part”. Companies can attempt to ensure survival through agility enhanced by group thinking, but it is also important to make sure the right decisions are made.

“We have learned that every tool that amplifies and orchestrates human intelligence can become a trap. Selecting the data that fit a particular task can lead us to rely too heavily on those data, and miss more important data that at first appear peripheral,” warns Mulgan. “Predictive tools that make recommendations based on our past behaviour can turn us into caricatures of ourselves rather than helping us to learn ... this is why we have to learn both how to use digital tools and when to reject them so that we don’t end up trapped in new cages of our own making.”

Collective thinking by itself does not necessarily ensure that the right people are making the decisions. A paradigm shift from legacy control and command management systems will be imperative, although certainly not inevitable. Many institutions and systems act much more stupidly than the people within them, Mulgan comments. “There is a striking imbalance between the smartness of the tools we have around us and the more limited smartness of the results.”

## Smart mining

As Maptek progresses towards the enterprise system, and potentially the concept of the ‘digital twin’, it is clear that the world of mining is not just about collecting, storing, analysing and visualising data. Structures and interrelationships between mining processes and mining data are being discovered through the use of new-generation smart tools of augmented intelligence and machine learning. We can call it ‘smart mining’; however, this is only the start.

There is a consciousness to an organisation and a mining operation that is not portrayed in the new world of data and data scientists. Group cognition needs to be enhanced and exploited. This is the cognitive culture of the organisation. [Maptek](#) is reaching into this critical domain, understanding that data can become information and knowledge. Cognitive wisdom comes from merging digital knowledge with the historical knowledge and experience of the most powerful ‘computers’ in a mining operation: people! This is where we find the true collective intelligence of the smart mine of the future.

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<https://www.gim-international.com/content/article/collective-intelligence>

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