



Changing Minds and Changing Mines

Comments on the forces changing an industry to be more effective and efficient with fewer people, and how this is affecting mining.



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Vital industries around the world are discovering that times have changed significantly and that many “standard operating procedures” are no longer acceptable.

Forward-thinking, professionals are doing what you would expect them to do. They’re changing with the times. Adapting. Redefining. And basically re-inventing themselves. It’s a global phenomenon.

Mining - one of the world’s most vital industries - now sees that it can no longer operate with the inflexible business practices of the past. So mining has begun to re-invent itself.

Here’s what reinvention will look like ...

The world’s social and moral consciousnesses do not permit low-wage labor-intensive mining practices anymore. And that spotlight of attention is forcing mining to confront the fact that its deep pockets and oftentimes-strong government collusion has allowed the industry to maintain long-outdated, management philosophies and approaches.

Today mining has to mine safely, pay workers well and be profitable while supporting local and economic policies.

The focus increasingly is on phasing out labor-intensive, inflexible employment practices and bringing in new technology with a focus on transparency.

One dramatic mining example is in South Africa, where failures have been swiftly externalized and finger-pointing has usually quickly ended up with the favorite “scapegoat”, the mining companies.

Having made little progress over the past couple of decades toward modernizing or implementing new ways of working, those mining companies deserve some of the negative attention they are receiving.

But other industries around the world and in South Africa have embraced the idea of change and have made solid progress.

South Africa’s automobile plants have moved from similarly difficult conditions to a quality, process-driven environment staffed by professionally-trained employees.

Globally, the oil industry has made great strides toward technology-driven collaborative companies. Some mining companies are strating to apply the same principles and realize gains from similar remote monitoring, remote controlling and autonomous operations.

Mines without any people are a long way off. But even today fewer people exposed to dangerous conditions. And unskilled / semi-skilled jobs that used to be a hallmark of the industry are fading in to the past.

This is partly due to employees themselves: Increasingly, today's workers - around the world - will not accept being ordered to perform rote tasks without question in unsafe conditions with minimal communication.

At VCI, we are observing a definite shift toward the network-centric mine - an information-based mine staffed with specialist miners who apply their skills to the betterment of the system while machines do the work.

The Thin Operating Platform (TOPs) mine enables optimized drill-hole intelligence, stabilization of production, real-time data, greatly-improved safety and greatly-reduced environmental footprints.

Under TOPS, operations, growth and the role of the corporation are redefined to allow the system to "see itself", so mines can operate and compete more effectively and more profitably.

Broad adoption of TOPS is not yet common in the mining industry. These are not new concepts however. In the Oil and gas industries - where these ideas are more advanced - the benefits are clear:

- Reductions in operating costs
- Reductions in production losses
- Decreases in trouble-shooting time
- Production increases
- Decreases in re-work
- Significant cash savings

Mining is already an essential industry, improving the lives of 6+ billion people on Earth by providing materials to create and maintain hospitals, schools, homes, cities and transportation systems. Mining provides jobs worldwide and significant developmental research.

There is every reason to believe that mining - like similar industries - will adopt and greatly benefit from these new technologies and new ideas. Some companies are doing this now and beginning to see benefits similar to oil and gas.

Combined with a growing management

The TOPs Organization

TOPs is an organizational archetype based on information flows instead of hierarchy. Rather than acting based on their place in the organization, individuals act based on information. Computers do most of the routine work while employees become more focused on developing analyses and algorithms. There are six domains in a TOPs organization:

Strategic Apex:

Executive management, focused on external opportunities and threats.

Knowledge Hubs:

The basic organizing unit for knowledge workers, can be both physical or virtual hubs.

Remote Operations:

Operating, collaboration and control centers separated from the operations themselves.

Supply Chain:

Specialized knowledge hub focused on optimizing the entire supply chain, from source to customer.

Shared Services:

Transactional, routinized services, often outsourced.

Thin Operations:

The operations which are leaner with fewer people on site or in dangerous situations.

realization that positive changes are coming to mining, it is possible to say that mining is becoming a much more innovative industry focused on delivering the next generation operation.

As we have seen again and again in human history (and most especially in the past 30-40 years), technology transforms everything it touches.

Achieving the TOPS organization requires:

1. Integrated information systems allowing efficient decisions to be made with consideration of all relevant factors. Management involvement should be by exception, rather than continuous. And managers must be able to rely on the validity of information without going through cycles of analysis.
2. A new organizational structure that allows people to make decisions and remove unnecessary duplication.

3. Technology in the mines that can be controlled remotely or operate autonomously. First steps could simply focus on gathering information that is currently generated by operating equipment - whether it is controlled remotely or not - and using the information to improve maintenance and optimize the process ... today.

VCI is working with companies world-wide right now to develop, adopt and profit from the new technologies and new ideas that re-invent organizations while helping them meet today's new challenges ... and plan for tomorrow's.

VCI is a strategy and organization consultancy focused on delivering strategic insights, innovative solutions and new organization designs to our clients. To learn more about how your organization might benefit from VCI's thoughts, ideas, approaches and deep experience with vital industries world-wide, please contact one of our global leaders below.

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