

IM *International* **mining**

Informed and in-depth editorial on the world mining industry



PASTE SUPPLEMENT

PROCESS PROGRESS

PIPELINE TRANSPORT

UNDERGROUND ACCESS

CANADA'S CAPABILITY

PROJECT FOCUS: Zandkopsdrift

Mining's challenges and opportunities



John Jessop* summarises the findings of a 2011 Ventyx study that polled more than 256 mining companies on what they believe are the most pressing challenges for the industry today

Enterprise and technical-mining solutions vendor Ventyx recently revealed the latest findings from its annual survey gauging the perceptions of key stakeholders in the global mining industry. The year-end 2011 study polled more than 256 leading mining companies in North America, Latin America and the Asia Pacific region to reveal what high-level mining executives believe are the most pressing business challenges facing their organisations today. The study's respondents – primarily C-level executives, Vice Presidents or Directors from major coal, base metal, iron ore and/or precious metal mining organisations – were asked to identify their current challenges by level of urgency, and how they intend to protect profits and drive growth in today's dynamic business and economic environment.

Overall, the attitude of this year's survey respondents was positive, with 69% saying they are optimistic about the business outlook for their organisation. As such, it was not surprising to see the top concern for 73% of respondents is now optimising production and maximising production effectiveness, replacing last year's top challenge of ensuring workplace safety.

While workplace safety remains a paramount concern for mining leaders around the world, many companies have made significant investments to further advance communications,

*Vice President Global Mining Solutions at Ventyx, an ABB company. Ventyx (formerly Mincom) is a leading provider of software and services to the global mining industry. Currently, 17 of the world's 20 largest mining organisations rely on Ventyx's enterprise solutions.

processes and technology related to workplace safety in the past several years. It does, however, remain a complex topic that encompasses many factors, including company culture, equipment, work-management processes, and mechanisms for safety feedback. It is also an area that is impacted by many of the other top challenges mining executives face.

Regulation and recruiting

Despite a favourable labour market in many industrial sectors, the challenge of recruiting and training a skilled workforce also gained ground in this year's study, ranking third amongst respondents. This situation will become increasingly urgent as more mining companies embrace sophisticated automation technologies requiring workers with fundamentally different skill sets – skills that will also be in high demand in other industries.

Mining companies also face additional regulatory scrutiny as they look to develop new sites and increase production from existing operations. For 40% of respondents, regulatory scrutiny was noted as their primary obstacle to organic growth. This is an additional burden on organisations trying to maintain costs and growth in an economy which remains unstable. A full 65% of respondents say they continue to adopt aggressive cost-control strategies as a means to maintain or improve profitability. Another 43% are also adopting best-practice work and asset management frameworks for critical production assets, indicating that many companies continue to focus on streamlining their internal processes in search of cost savings and efficiencies.

Meanwhile, investing in information technology and systems emerged as a preferred

In the current climate, maximising production effectiveness came top of the list

strategy to improve overall operational performance. Respondents identified their inability to drill down into operational and asset-performance data, and the inability to correlate information across operational functions, as their main challenges in optimising performance.

The research also showed many companies are still not fully leveraging the technologies they need to bridge these information silos for comprehensive visibility across the business. For example, 35% of respondents said the inability to access real-time information on operations and asset performance is an inhibitor to improving overall operational performance. However, only 19% of respondents say they are currently deploying or planning to deploy mobility solutions that could provide this level of real-time data access and visibility for field operations and maintenance – despite 66% acknowledging the ability of such a solution to boost productivity.

In an industry where companies continually grapple with functional “silos” of data, the Ventyx research study suggests that many mining organisations still have a ways to go in effectively deploying technology to bridge these gaps. Only when mining organisations fully integrate key data – across back-office corporate applications, the vast number of applications for technical mining execution, and operational technology – will they be able to achieve the true end-to-end enterprise visibility they need to impact operational change and efficiency.

Mining bosses' top five challenges

1. Optimising/maximising production effectiveness

In 2011, “optimising/maximising production effectiveness” jumped to the top of the survey list, with 73% of respondents noting this as their top concern. This also is not surprising, as optimised performance and operational effectiveness drive most everything – from margins and shareholder value, to the ability to make timely and accurate strategic and tactical decisions. This change from last year's top response of “ensuring workplace safety” corresponds to the highly positive outlook of respondents. Some 69% of respondents say that they are optimistic about their general business outlook.

This surge in optimism is the result of an ongoing trend of higher global demand for mining products and a corresponding boost in commodity prices. Mining companies are embarking on new projects and looking to increase production at existing sites and facilities. As a result, management sees

significant opportunity in optimising business processes across multiple facilities and fine-tuning production at new and existing sites.

However, in addition to capitalising on surging markets for coal, precious metals, and rare earth elements, another motivation for improving production efficiency is that higher commodity prices also translate into higher production costs for mining companies themselves.

For the most part, near-surface, low-cost orebodies are fully exploited and new operations are more technically challenging and expensive to exploit. Miners are also exploring and operating in areas with less infrastructure, uncertain or arcane regulatory climates, and potential political instability. These factors put pressure on an already stressed labour pool, leaving companies to find new ways to improve productivity from their existing assets and workforce, while employing new technologies such as mobility solutions to help achieve their production goals.

Proven, standardised production methods and technology act as a counterweight to the uncertainty and help establish a more predictable, cost effective and manageable business that shareholders and customers rely on.

2. Ensuring workplace safety

The events in Chile and West Virginia no doubt played a significant role in making safety the top consideration of respondents in 2010. And while the number of respondents ranking safety as their top challenge dropped by 18% this year; it is still a significant concern for companies. Any headline-making incident puts renewed pressure on the industry to demonstrate its commitment to safety.

Several factors likely contributed to what should not be interpreted as a waning concern with safety. First, over the course of the past decade, many companies have made significant investments in the communications, processes and technology related to workplace safety. Many of those systems and processes are now part of the fabric of many mining organisations, and management's attention is shifting back to production issues. Second, the industry's more innovative companies are investing in the automation technology that takes the worker out of the more dangerous pit and underground environments. And third, safety and operational efficiency are evolving to become tightly intertwined as complementary concerns.

One key to workplace safety is ensuring the stability and performance of assets, such as heavy machinery. Asset reliability is critical because of the remote and often dangerous locations of assets in any mining operation, and the catastrophic nature of mining-equipment failures, due the sheer size and power of the

machines involved. As already noted, while many companies have made significant investments in technology, there is still more to be done is ensuring improved asset management. Some 35% of survey respondents noted an inability to access real-time information for operational and asset performance and 31% noted insufficient information to analyse asset performance.

3. Recruiting and retaining skills

For respondents to this year's survey, personnel concerns ranked as the third most pressing challenge – replacing “managing capital projects” out of the number three spot. Clearly, higher levels of unemployment don't necessarily

equate with a larger pool of qualified personnel for mining companies to draw from, and finding skilled people to fit key positions is a top priority for the industry.

Analysing this concern, it is critical to keep in mind that a significant number of older, highly skilled mining workers are nearing retirement age. Over the years, companies have made a considerable investment in these workers, and it can be difficult to find competent replacements with comparable skills and experience. Also, as mining companies find they must move production to increasingly remote locations, it can be challenging to find new generations of skilled workers willing to relocate for extended periods of time. Finally, the boom in automation



NRG1-ECO™
ENERGY SAVINGS

- Control of DPM (Diesel Particulate Matter)
- Modular Expansion
- Ventilation-On-Demand



AQM™
ENVIRONMENTAL MONITORING

- Solid State Hardware
- Real-Time Monitoring
- Web-Based Portal



RopeInspector™
AUTOMATED ROPE INSPECTION

- ROI < 5 weeks
- 360° Visual Coverage
- Complies to Safety Legislation

SOLUTIONS NOW FOR TOMORROW'S CHALLENGES



BESTECH
www.bestech.com

Visit us at CIM Edmonton - Booth # 0909

has spawned demand for an entirely new technical skill set – skills that are in equally high demand in other industries.

To address these issues, market-leading companies are investing in their existing workforce through intensive training, promoting and making more systematic the process of knowledge transfer, and accelerating field readiness programs for new workers. Technology advancements are also enabling higher transparency of information across organisational layers and sectors, therefore standardising knowledge access and transfer. Similarly, developments in automation have boosted employee safety via increased access to information, equipment history and step-by-step processes in the field.

4. Managing capital projects

In 2011, 33% of respondents cited “managing capital projects” as a top concern, versus 46% in the previous year’s survey. Obviously, mining is still a capital-intensive industry, and companies certainly haven’t abandoned their focus on effective capital deployment.

The shift in ranking may simply be an indication that market conditions have made other concerns more urgent. Also, following the recent recession, many companies refrained from investing in large-scale projects. In the weeks since this survey ended, many post-



Recruiting and retaining skills remains a headache for many mining groups

financial crisis projects have met trouble, with reports of several cost blow-outs. It is expected that this category will move back up in the rankings in the next survey.

5. Working together

Survey respondents identified “ensuring different departments work together” as a high priority, giving it the same ranking as “managing capital

projects.” More mining companies are seeing the operational advantages of increased collaboration within the enterprise and across their multiple sites. As companies use information technology to bridge their organisational silos, they find that they can improve control and responsiveness and deploy resources and capital more effectively and strategically.

Outlook increasingly upbeat

One of the survey’s recurring themes is the fundamental importance of cost control, predictable performance, and growth through the standardisation of processes and the adoption of best practices. To achieve the requisite improvements, mining companies must continually invest in IT systems that can improve processes, visibility and safety, as well as bridge the current gap between informational and operational systems that contribute to production.

Additionally, automation will play an increasingly important role, providing mining organisations with the ability to monitor conditions in real-time and act immediately. Mining executives must have clear and concise business plans backed by enterprise visibility, predictability, and production optimisation to take their organisations to the next level. More efficient processes and execution through integrated technology are the keys to achieving this. **IM**

HAIWANG, FOCUS ON HYDROCYCLONE



RELIABLE QUALITY
BEST SERVICE
EXCELLENT COST-PERFORMANCE

Classification: $\Phi 10\text{-}\Phi 1250\text{mm}$

Separation: $\Phi 150\text{-}\Phi 1500\text{mm}$



Classification Hydrocyclones



Separation Hydrocyclones



Dewatering Hydrocyclones



Concentration & Dewatering Hydrocyclones



Tel: +86-631-5621536
Office: Sydney Mexico

Fax: +86-31-5621557
Lima Toronto St.Paul

Website: www.wh-hw.com
Teheran Tucson

Email: weihaihw@163.com
info@wh-hw.com