While commodity prices are generally still strong, the current slow down in China in commodity buying and the uncertainty in Europe is exerting downward pressure. Even still, investment in the long-term future of the industry continues with production ramping up. As miners seek to replace ageing resources, new, expanding or recommissioned mines are entering the picture, urging mining executives to take a sustainable and cost effective approach. Yet, they are faced with a list of pressures that should not be underestimated, particularly the growing skills shortage, community concerns and production falling short of investor expectations.

**Challenging Production Plans**

Cyclical prices, fluctuating demand, remote locations and legacy issues make leading an efficient production start up or ramp up plan paramount. Not only must minerals and ore be extracted efficiently, but the supporting infrastructure must also be established in a way to meet both current and future levels of demand.

The production plan entails managing talent, adhering to schedules, controlling costs and refining internal processes, all while delivering on shareholder expectations. With the shortage of skilled employees, the use of contract workers is prevalent among miners. The mindset of contractors differs from that of employees—they tend to think more in the short-term and do not have vested interests in the long-term success of the mine. Additionally, many start ups are headed by interim management, journeymen or expatriates who are merely temporary. Based on our experiences working with mining executives, we have seen that they need to overcome this detrimental mindset and quickly bring both employees and contractors up to speed to perform at the level necessary to meet production targets.

During the transition from project construction to production, schedule deviations and cost overages can be rampant—average overruns can reach upwards of 70 percent. Internal processes can often cause delays, rework and lost time; in fact, less than 10 percent of companies achieve their internal targets. Yet, efficient processes can become a significant competitive advantage. This is a missed opportunity.

Success depends on all levels of mining management being effective in allocating and managing resources appropriately as well as installing robust project controls at the point of execution.

**Expanding an Existing Mine**

“A business improvement project was conducted at Anglo Coal’s New Vaal Colliery utilising a team from Alexander Proudfoot working alongside operational staff. A 3-to-1 return was achieved, and the resulting capacity improvement enabled the colliery to increase output significantly to serve growing power station demand. The project enabled operating staff to gain a deeper understanding of the mining processes and the effect of quality on process flow, creating more stable and predictable output and quality of product.”

Riaan van der Merwe, COO, Coal of Africa Limited
(refering to project as SVP, Eskom Collieries, Anglo Coal)
Declining Worker Skills

While mining companies prepare for increased production, they are finding themselves devoid of the talent necessary to achieve their objectives. The average age of skilled workers is generally estimated to be 50 years of age or older and, with younger generations steering toward other industries, the industry will find itself struggling to replace baby boomers approaching retirement. Amplifying this effect is the fact that the search for resources is steering miners into more geographically remote and rough terrain areas, impacting the industry’s attractiveness to new college graduates. The statistics are daunting—a shortfall of 60,000 workers in Australia is expected by 2013, while Canada expects a shortage of 90,000 by 2017.

Many mining executives we are working with see this as a significant issue and, unless it is addressed, labour shortages will slow growth and drive up costs during an opportunistic time for the industry. With competition for knowledgeable workers ever increasing, management should address how best to attract, develop and retain employees.

Growing Community Expectations

As mines prepare to start production, they are faced with host communities that have developed higher expectations of participation and standards of environmental consciousness. Community stakeholders—everyone from employees to government officials to local citizens—are driving mining executives to focus on gaining and maintaining a social license to operate.

Prevalent examples show ramp ups that are delayed not because of engineering or project issues, but rather due to engagement issues with the local community. Executives find that their management teams will need to manage and deliver on community expectations while proactively monitoring sustainability activities including water pollution, energy usage and carbon emissions. A community engagement strategy at the outset is a key risk mitigation activity and should be included in the project’s feasibility assessment and be assigned an expected return on investment. Most importantly is how a community engagement strategy is implemented, which is often the reason good strategies fail. Effectively launching an engagement strategy is vital to developing positive community relations. Yet, mining companies tend to delegate community and employee engagement to temporary contractors who cannot devote the necessary level of attention to the matter.

The Proudfoot Production Ramp Up Approach

Since 1946, Alexander Proudfoot has undertaken hundreds of significant mining projects around the world across a wide range of surface and subsurface mines, smelters and refining operations. Based on this in depth experience, we developed best practices to manage operations during the production start up and ramp up phases.

Given the pressures facing mining executives to get new operations up, running, fully functional and ready to deliver on their commitments, we work with management teams to assess their operational readiness. A combination of onsite assessments and in depth analyses enable our mining experts to identify and minimize risks associated with the start up of a new mine operation or the ramp up of a newly established one. Among our other areas of focus, talent management, total stakeholder engagement and process improvements are three critical elements we offer to ensure long-term mining successes.

- Talent Management: Mining executives are now taking a comprehensive approach to talent management. Proudfoot helps miners take it to the next level by not only properly managing...
existing workers to accomplish a mine’s objectives, but also helping them to develop the methodology and processes to hire and train the right workers. By addressing skills gaps, focusing on competencies and ensuring organisational alignment through our unique People Solutions activities, we work directly with management and supervisors to ensure that employees across an organisation are prepared to perform effectively, embrace and contribute to positive change, and drive lasting results.

- **Total Stakeholder Engagement**: Total stakeholder engagement means aligning all interested parties—families, unions, employees, management team members, contractors, suppliers and customers. Mining executives should strive to educate all stakeholder groups on their roles and behavioural expectations during the production start up and ramp up phases. Proudfoot’s three-part Total Stakeholder Engagement model implements a sustainable Corporate Social Responsibility programme by building capable people, clean processes, and modern infrastructure and operations.

- **Process Improvement**: Proudfoot is a pioneer in the process improvement arena. Our approach focuses on developing and implementing the right operating model, one that develops distinctive capabilities through processes, management systems and people. An efficient and effective operating model allows miners to better execute production plans and manage costs. It also promotes increased throughput through reliability and predictability, creating the foundation for future growth.

The Proudfoot approach assesses a miner’s operational readiness, addresses critical factors and builds a culture that ensures success even amidst external complexities, inherited issues and heightened scrutiny.
Production Start Up and Ramp Up in Focus
Proudfoot has worked side-by-side with companies to move them from discovery to production.

Reopening a Closed Mine

- **Company**: International Iron Ore Producer
- **Location**: West Africa
- **Situation**: As part of its objective to develop a series of mines around the world, the company was focused on ramping up production at an iron ore mine in West Africa. The company partnered with Proudfoot to assess its operational readiness, implement processes, and develop management systems to ensure the mine hit its publicly declared production targets for its first shipment and beyond.
- **Approach**: Proudfoot developed and installed the necessary management tools and systems to drive mine performance, supported by the training and coaching required to embed the right behaviours across management and the workforce. Additionally, attention was paid to the local community and key government stakeholders to foster acceptance for the mining project.
- **Results**:
  - Pre-announced production targets were met, avoiding a potential margin loss of $17 million.
  - World-class performance standards were installed to manage production and predictability of supply.

Accelerating Production at a New Mine

- **Company**: International Diamond Mine
- **Location**: Canada
- **Situation**: A mining company was working on several exploration projects in Canada and had two diamond mines making the transition from project mode, through start up and into sustainable operations. The company partnered with Proudfoot to install the management tools necessary to manage the transition and ensure the mines reached planned production targets within the first reporting period.
- **Approach**: Proudfoot worked with the management team to introduce several management tools and processes to increase performance visibility, conduct root cause analysis, manage dilution levels, enhance active supervisory behaviours and create a culture of continuous process improvement.
- **Results**:
  - Nearly CAD $20 million in financial benefits
  - 68 percent increase in metres advanced per man shift
  - Ore dilution reduced from greater than 33 percent to less than 20 percent
  - Consistent and stabilised daily plant production achieved
  - “The scale, speed and scope of the improvements that Proudfoot achieved went way beyond what we could have achieved on our own.”
  —Senior Vice President of Operations