Canadian companies expand their presence in United States and Mexico
It’s all about more.
FEATURES

CANADIANS WORKING ABROAD
10 Capstone Mining Corporation of Vancouver continues to demonstrate a strong commitment to working abroad with a mine in Mexico, and another in the United States.

16 Primero Mining Corporation of Toronto shows its Corporate Social Responsibility skills by employing nearly 15 per cent of the entire population from a local community near its San Dimas Mine in Central Mexico.

20 Minera Alamos Inc. of Toronto continues to advance its Los Verdes copper project in Mexico with help from a new mineral-sorting technology.

TECHNOLOGY

22 TREATING TAILINGS
Leon Botham, Vice-president of Clifton Associates, Saskatoon, takes a look at ways of controlling tailings to avoid future liability.

24 MACHINERY FIRES
What to look for in a fire suppression system for heavy mining machinery.

COMPANY PROFILE

26 B & D Manufacturing of Chelmsford, Ontario, is this month’s featured company.

DEPARTMENTS

5 EDITORIAL
This month Editor Russell Noble expresses his thanks that 2015 is over, but admits that things aren’t looking that much better for the mining industry in 2016.

6 FIRST NATIONS
Ontario Regional Chief Isadore Day talks about the election of Prime Minister Justin Trudeau and setting the tone, pace and opportunity for positive change.

7 LAW
A column by Hernan Rodriguez and Jean-Philippe Buteau, Partners with Norton Rose Fullbright, looks at investment opportunities in countries that are still somewhat unexplored.

8 CSR & MINING
A regular column by Michael Torrance, a lawyer in Norton Rose Fullbright’s Toronto office, on Corporate Social Responsibility.

28 IN MY MINE(D)
Sander Grieve, Head of Mining, Bennett Jones, Toronto, writes a letter to Prime Minister Trudeau about mining in Canada.

30 UNEARTHING TRENDS
Iain Thompson, Associate Partner, Advisory Service, EY, talks about harnessing information technology to drive productivity gains.

ABOUT THE COVER
This month’s cover photo was taken at Capstone Mining’s Cozamin mine in Mexico.

Coming in January
Canadian Mining Journal takes an exclusive look at First Nations and the Canadian Mining Industry.

For More Information
Please visit www.canadianminingjournal.com for regular updates on what’s happening with Canadian mining companies and their personnel both here and abroad. A digital version of the magazine is also available at www.digital.canadianminingjournal.com
His decision to cut energy costs by 70% with LED high bay lighting was a great idea. And a great start.

Once you start seeing the benefits of our incentives for LED high bay lighting, you’ll want to start upgrading your motors, fans, pumps and compressors to higher efficiency systems as well. When you do, you’ll be joining thousands of organizations across Ontario who are already enjoying the savings that our programs deliver.

Take a look at their stories and our incentives at saveonenergy.ca/business
EDITORIAL

A calendar of carnage

By Russell Noble

Thankfully, and I say that on behalf of just about every mining company still in business, 2015 is over, and another dismal year has come to an end.

Mind you, the changing of one numeral from a 5 in 2015 to a 6 in 2016 on the calendar isn’t a magic eraser because, as most of you are probably reluctant to admit, 2016 doesn’t look that great either.

In fact, forecasters are predicting that bigger debts, and lower commodity prices, will continue to plague the industry for months, and perhaps for even as much as a year or two more.

It’s hard to swallow such speculation, but then again, when major players announce losses upwards of 35%, and some minerals lose more than 70% of their value, the carnage suffered within the mining industry becomes all too clear.

Naturally there are always positive and less-pessimistic forecasts, but they’re hard to find. Even when some companies are still surviving thanks to hard work (and luck), they are reluctant to talk about it because they fear that any mention of “doing okay” could be misconstrued as being cocky and overconfident.

In any event, it’s probably wise for those not caught up in the freefall since the commodity crisis hit that they remain silent and carry on doing what they’re doing without bragging and being pompous about it.

In the tight world of mining, word travels faster than some mine elevators, and nobody likes to hear about other’s success when they’re own bottom line is getting redder by the day.

And investors, in particular, don’t like to hear that the company they once had faith in is reporting dismal quarterly results on a continuing basis.

But realism is hard to avoid as witnessed by the number of companies that have recently told their workers, and their families, that after a certain date and time, their services will no longer be needed.

For those of you who have never lost a job, it’s a devastating moment because in many cases involving a mine, and its miners, it’s the only show in town; the only place where their particular skill sets apply.

“But it’s all I know how to do” is a sad, but widespread comment that’s being heard throughout the mining community, and unfortunately, it’s going to be heard a lot more in the coming months as more and more mines (and their suppliers) must make the difficult decision to carry on (at a loss) or bite the bullet and shut down and let people go.

Like I said earlier to those of you who have never lost a job, it’s a gut-wrenching experience that you never forget, and it’s especially painful for those on the ‘white-collar’ level where it’s becoming increasingly apparent that managerial positions aren’t as vital to the operation as those at the ‘hands-on’ level where many feel the real work is done.

“Office miners,” as I call the ‘white-collar’ contingent, certainly play a major role in the decision-making process, and their expertise helps in making the company’s financials turn around, but it’s still incredibly difficult for them to see their mine (and their job) shut down.

In any event, it’s probably wise for those not caught up in the freefall since the commodity crisis hit that they remain silent and carry on doing what they’re doing without bragging and being pompous about it.

And investors, in particular, don’t like to hear that the company they once had faith in is reporting dismal quarterly results on a continuing basis.

But realism is hard to avoid as witnessed by the number of companies that have recently told their workers, and their families, that after a certain date and time, their services will no longer be needed.

For those of you who have never lost a job, it’s a devastating moment because in many cases involving a mine, and its miners, it’s the only show in town; the only place where their particular skill sets apply.

“But it’s all I know how to do” is a sad, but widespread comment that’s being heard throughout the mining community, and unfortunately, it’s going to be heard a lot more in the coming months as more and more mines (and their suppliers) must make the difficult decision to carry on (at a loss) or bite the bullet and shut down and let people go.

Like I said earlier to those of you who have never lost a job, it’s a gut-wrenching experience that you never forget, and it’s especially painful for those on the ‘white-collar’ level where it’s becoming increasingly apparent that managerial positions aren’t as vital to the operation as those at the ‘hands-on’ level where many feel the real work is done.

“Office miners,” as I call the ‘white-collar’ contingent, certainly play a major role in the decision-making process, and their expertise helps in making the company’s financials turn around, but it’s still incredibly difficult for them to see their mine (and their job) shut down.
The new federal government of Prime Minister Justin Trudeau comes with very high expectations for all Canadians, especially for First Nations. We have endured a decade of darkness and despair under a Conservative regime – First Nations are ready to move beyond this era, setting the tone, pace and opportunity for positive change.

In recent years, approximately one billion dollars in critical social services for First Nations was held back by the Conservative government. Prime Minister Trudeau has pledged to repair and restore the Nation to Nation relationship between First Nations and Canada. This includes a long-awaited national inquiry into Missing and Murdered Indigenous Women.

Prime Minister Trudeau has pledged to invest in badly needed critical infrastructure – this includes ending decades of boil water advisories within five years. Most importantly, First Nations are also in dire need of investments in housing, health, and access to affordable food. We need billions of dollars for education and job training.

There is so much work that needs to be done to begin to right all the wrongs inflicted upon our Peoples over far too many decades. So where does the mining industry fit in all of this? First of all, we don’t expect industry to provide First Nations with the funding and services that government has denied us.

However, we do expect industry to invest in our communities and partner with our Peoples. If you want a share of the resources from our lands, then there is definitely a quid pro quo. But you also have to remind government – both at the provincial and federal level – that they also have responsibilities. Otherwise, our Peoples will continue to suffer – and industry will continue to encounter delays.

Another big promise that Prime Minister Trudeau has made is to implement all 94 calls to action released by the Truth and Reconciliation Commission this past June. However, the federal government cannot do this alone. Society and industry must also participate.

Specifically, the mining industry needs to follow through on Recommendation Number 93.

It states: “We call upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples as a reconciliation framework and to apply its principles, norms and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources.”

This would include, but not be limited, to the following:

Commit to meaningful consultation, building respectful relationships, and obtaining the free, prior and informed consent of Indigenous peoples before proceeding with economic development projects.

Ensure that Aboriginal peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and that Aboriginal communities gain long-term sustainable benefits from economic development projects. And,

Provide education for management and staff on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal—Crown relations. This will require skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism.”

We need to once and for all eliminate the horrible social conditions that result in missing and murdered women and girls – that’s not an obvious investment to industry, but it’s a vital starting point for First Nations, first-order of business to get our communities investment ready. The time to invest in our Peoples is right now. The dividends will provide security and prosperity for all our children.

Industry also has a duty to remind the federal and provincial governments that First Nations must be treated as equal partners in resource development. You must remind governments that First Nations signed Treaties in the belief that they would be sharing in the wealth of the land and resources.

For example, when the Chiefs in northwestern Ontario signed Treaty 3 in 1874, they said they could “feel the rustling of gold” beneath their feet, which they assumed would be shared equally with the Crown.

One of the Treaty signatories, Chief Powasson, had a set of notes made for him during the negotiations. The notes state: “If some gold or silver mines be found in their reserves, it will be to the benefit of the Indians. But if the Indians find any gold or silver out of their reserves, they will surely be paid for the finding of mines.”

However, the final Treaty document makes no reference to sharing gold or any other resource. And a lot of gold, silver, iron ore, diamonds – and the list goes on – has been found on Indian land for the past 150 years. It has made Ontario very rich. CMJ
Colombia, a country of challenges and opportunities

By Hernan Rodriguez and Jean-Phillippe Buteau

The drop in global commodity prices, market volatility and the general crisis suffered by the mining industry throughout the world has seriously affected the industry; nevertheless, medium- and long-term investment opportunities are being generated, particularly in countries that do not have a significant mining tradition and are as yet, to a great extent, unexplored.

Colombia is a good case in point. Geographically speaking, it is ideally situated; it has untold geological potential and a democratic tradition, but despite having several major coal projects, it has never had a defined mining culture and that is why, for example, Colombia has yet to host a large-scale modern metals project.

With the security situation rapidly improving around the country, a few years back Colombia decided to present itself to the world as a mining country, offering interesting incentives to foreign and local companies and preparing its institutions to collaborate with foreign investors. That moment coincided with high commodity prices and several companies, many of them Canadian, came to Colombia. However, the crisis made it difficult for these companies to obtain the financing required to develop their projects and keep their mining titles in good standing. As a result, several small companies and individuals with prospective mining titles are today looking for investors to maintain and develop them. A good option for these companies is to enter into joint ventures or similar contractual schemes with major mining companies and investment funds that are seeking to invest in exploration of mining titles.

Strategically speaking, this could be a good time to invest in mining projects in Colombia. However, it is a complex country in social and environmental terms. Here are some key aspects to consider when investing in Colombia:

ENVIRONMENTAL ASPECTS: Colombia has 32 environmental authorities. Despite considerable efforts, it has not been possible to homologate the review and authorization processing of environmental permits under the roof of a single authority. Therefore, when studying a mining or any other project in Colombia, it is not only necessary to check on the national permits involved but also the so-called “local permits,” such as water concessions and forestry usage, among others.

It is also crucial to conduct a review of the area where mining activities are to be performed so as to first confirm it does not fall within zones where it is forbidden to carry out mining activities, such as protective forest reserves, national parks and moors. The potential investors must also verify that the zones of interest are not considered “restricted mining areas,” which include Forestry Reserves (declared under Law 2 of 1959), Peasant Farmer Reserve Areas and Integrated Management Districts, amongst others, since mining activities in these areas are subject to obtaining special permits that may considerably delay the implementation of the mining project.

Since the mining cadaster is not yet totally updated, it is always advisable to submit formal petitions to the relevant authorities to confirm that the mining activities are not in fact prohibited or forbidden in the relevant area.

SOCIAL ASPECTS: As mentioned above, Colombia is not by nature a mining country. Communities in the vicinity of mining projects do not always associate mining projects with their development and local municipal authorities are sometimes reluctant to allow mining. Therefore, an appropriate and timely socialization is very important for the future of the project. This is in addition to the prior consultation that has to be carried out with communities present in the area to be explored and developed.

Last but not least, wherever there is a prospective mining area in Colombia, one is likely to find miners exploiting it without a mining title. In general, there are two types of illegal mining in Colombia: what is known as “criminal mining” – which is usually conducted in association with other criminal activities – and “traditional mining,” where the miners’ income is generated by their artisanal mining activity.

In the case of criminal mining, the Colombian government is taking all necessary measures to combat these activities and the army and the national police are committed to this cause. In the case of traditional mining, the Ministry of Mines and Energy has adopted the policy of mining formalization and issued standards, together with the mechanisms, that will allow the holders of the mining titles accompanied by the respective authority to implement mining formalization programs and develop their projects with the support of the community. It is important to note that the formalization programs are voluntary, and under no circumstances is the mining title holder obliged to carry them out, but they have become a very interesting tool for developing a mining project in accordance with the needs of the community.

In conclusion, Colombia represents a good mining opportunity for foreign investors who understand that the timely and appropriate handling of social and environmental aspects are critical for the success of any mining project in this country.
Contemplating binding CSR Dispute Resolution in Canada

By Michael Torrance

What will the election result and new government in Canada mean for corporate social responsibility (CSR)?

The Harper Government’s CSR Strategy for the Extractive Sector (CSR Strategy) was adopted in 2009, adopting some but not all of the recommendations of the 2007 National CSR Roundtables (the “Roundtables”). The CSR Strategy included endorsement of certain international CSR standards, including the International Finance Corporation (IFC) Performance Standards and Voluntary Principles on Security and Human Rights. In terms of dispute resolution, the 2009 CSR Strategy created a “CSR Counsellor” complaints review process, which was purely voluntary and from which several Canadian companies chose to withdraw.

A proposal for an “enhanced” CSR strategy was made by the Conservatives in 2014 but was never fully implemented. The enhanced strategy included endorsement of additional standards such as the United Nations Guiding Principles on Business and Human Rights (“Guiding Principles”). The 2014 enhanced strategy also proposed introducing consequences, namely withdrawal of “economic diplomacy” and government support for non-participation or non-compliance with the endorsed standards.

Pre-election, some Parliamentarians, including key members of the Liberal Party, have proposed even stronger binding adjudication of CSR related disputes involving Canadian companies working abroad, including adoption of the full extent of recommendations from the Roundtables in 2007. The 2007 Roundtables had recommended the establishment of a tripartite Compliance Review Committee (“Committee”), analogous to arbitration, that would determine the nature and degree of company non-compliance with endorsed CSR standards. Such a Committee could indicate measures to be taken by the company to return to compliance and the monitoring of those measures, and determination that no further action is required. In cases of serious non-compliance the Committee could make recommendations with regard to the withdrawal of financial and/or non-financial services by the Government of Canada (consequences quite similar to the 2014 enhanced CSR Strategy proposal).

Opposition Members of Parliament, including the now governing Liberals, strongly criticized the Harper Conservatives for not implementing this aspect of the Roundtable recommendations. During the election it was publicly stated that a Liberal government will act on the Advisory Group’s recommendations, including adopting Canadian CSR standards and dispute resolution mechanisms like the Tripartite Committee.

If this does become policy, Canada’s extractive sector will need to formulate a position to promote fair and effective dispute resolution, reflecting the needs of business, as well as affected communities and other legitimate stakeholders. This will necessitate consideration of the lessons learned, successes and policy failures from 2007 to the present.

Any model for CSR arbitration for the extractive sector should draw from the lessons and best practices of analogous dispute resolution processes that have achieved success in adjudicating disputes between business and stakeholders. To that end, one model worth considering is labour arbitration – a method of private dispute resolution between workers organizations and companies. There is much to be learned from labour arbitration as a model for effective and efficient dispute resolution involving corporate stakeholders, and addressing important issues such as human rights. Key characteristics include the use of private arbitrators selected jointly on consent of the parties in most cases, clear rules on who has standing to bring complaints, application of known standards agreed to by the parties and use of informal legal procedures emphasizing efficiency. Importantly, where arbitration is available, parties are prohibited in law from suing in the courts on the same issues. Decisions of arbitrators are also reviewable by courts, particularly if they are flawed on the basis of procedural fairness. To date, there has been no discussion in policy circles on these types of details.

If that were done, industry may insist that any CSR “arbitration” or dispute resolution process: (1) allow parties to select arbitrators they find mutually acceptable; (2) clearly identify who may access such processes; (3) limit the jurisdiction of the arbitrator to applying transparent CSR standards accepted by industry; (4) prohibit court based legal claims on the same issues covered by arbitration; (5) allow arbitration decisions to be judicially reviewed to ensure arbitration processes are fair and accountable. These are only some of the considerations that would be necessary to take such abstract concepts into reality.

Whatever the policy direction taken, success will depend on heeding lessons from history and responding to realities on the ground. Industry must be ready to get ahead of such debates and respond should a “binding” versus “voluntary” policy approach to CSR become inevitable in the next five years. CMJ

Michael Torrance is a lawyer in Northern Rose Fulbright’s Toronto office.
GET ON BOARD
WITH A LEADING SOURCE OF MINING
COMPANY & PROPERTY DATA

The 2016 Mines Handbook
is an incredibly powerful resource in your business arsenal.

Featuring comprehensive profiles on over 2,000 active publicly-traded mining companies as well as over 1,400 mines and advanced projects related to those companies, your business decisions will always be backed up by the most up-to-date industry data.

Order Your Copy Today!

Call 1-888-502-3456
or by email at info@northernminer.com

www.mineshandbook.com

Mines Handbook - 38 Lesmill Rd., Unit 2, Toronto ON, M3B 2T5
BEYOND BORDERS

MINING COMPANY GOES BEYOND CANADIAN BORDER TO WORK IN MEXICO AND U.S.

By Russell Noble
Two very distinct views of Capstone’s Cozamin Mine in Mexico; one at night showing its picturesque setting, and the other during daylight production.

Winning and working two mines in two countries outside of Canada obviously poses challenges from a logistical perspective, but for Capstone Mining Corporation of Vancouver, its mines in the United States and Mexico are no different than what’s happening at its flagship mine in Yukon.

In fact, since the company started in 2003, and put its Cozamin Mine in Mexico into production in September 2006 and Minto Mine into production in Yukon in October, 2007, Capstone’s business approach to mining isn’t affected by geographical location.

Its mine plan for all three properties (Pinto Valley in Arizona, Cozamin in Mexico, and Minto in Canada) are based on the same criteria; high production, sustaining cost efficiencies and, a strict environmental program to provide an increased awareness of environmental issues to employees working at its mines.

One distinct plan for three distinct mines works for Capstone as the company continues to prosper from steady production at Minto, Pinto Valley and Cozamin.
In Mexico, for example, the Cozamin Mine, located 3.6km north-northwest of Zacatecas City in north-central Mexico, consists of 44 mining concessions covering approximately 3,445 hectares, with a copper-silver underground mine, and a mill with an operating daily throughput of 3,300 tpd.

In 2014, the 682 workers at the mine produced 19,800 k tonnes of copper from an ore grade of 1.74 per cent, with by-products of silver, zinc and lead. There are approximately 229.3 million pounds of contained copper in reserve.

The mine extends for a strike length of more than 1.5 km and reserves extend to a depth of 800m. Access to the underground workings is obtained from two service and haulage ramps and a hoisting shaft.

Equipment on site includes, in part, four haul trucks, eight loaders, two jumbo drills, two jumbo bolters, two long-hole jumbos, one stope mate, one long-hole Cubex, two on-high trucks, one scissor lift, two telehandlers, two utility trucks for diesel fuel and finally, a passenger bus to transport miners and other workers to and from the site.

It’s a large fleet, but one that’s needed to support the mine’s production processes.

Tomas Iturriaga-Hildago, Vice President of Capstone’s North
American Operations, says there are three mining methods being used at the mine: over-hand, cut-and-fill using waste rock fill; Avoca retreat, using waste rock fill, and: longitudinal longhole open-stopping with delayed waste rock fill.

On surface, the ore is treated through a crushing circuit with primary, secondary and tertiary crushers, a grinding circuit featuring two primary ball mills and one regrind ball mill, and flotation/thickening/filtration circuits for copper and silver concentrates, plus fully equipped assay and met labs.

Obviously, ‘production’ is one of Capstone’s top priorities and at Cozamin, the company is now also undertaking the construc-
tion of a backfill system to improve underground stability, and accelerate a back-fill plan to enable it to recover high-value remnant pillars, and reduce tailings storage capital costs for surface storage.

And furthermore, improved material handling in the mine is ongoing to reduce haulage costs, provide better access to deeper material, and to improve ventilation.

The mine is connected to the national power grid with current approval to draw 10.5 MW with on-site generators, both operating and back-up, have a capacity of 1.0 MW.

The mine sources its process mills and mine water supply from seasonal rainfall, permitted wells, groundwater inflow from abandoned mines and a municipal waste water treatment plant.

When it comes to tailings, a dam is located on the south side of the property and thanks to a recent lift, the tailing storage facility is expected to add 1.47 million cubic metres of volume and extend Cozamin’s mine life for an additional two years of mining.

The mine life of Cozamin is now expected to reach 2020.

Back in the United States at its Pinto Valley mine in Arizona, located about 125km east of Phoenix, Capstone is also
busy working the mine that it put into production just two years ago.

With measured and indicated mineral resources at 1,604,266 million tonnes grading 0.31 per cent copper, the open-pit Pinto Valley mine isn’t as rich as Cozamin, but with an estimated mine life to 2026, work underway to significantly extend the mine life, and a planned operating throughput of approximately 52,000 tpd, the Arizona mine holds great promise for Capstone’s future.

In fact, Pinto Valley is geared to the future thanks to an upgrade to its equipment fleet including 19 haul trucks, two hydraulic shovels, one loader, four track dozers, three water trucks, three graders, one tire dozer, three rotary blast hole drills and one air-track drill.

The mine is an open-pit operation with an L-shaped pit that is approximately 340m deep, 1550m wide, and 2170m long, with its ore processing, tailing storage, waste rock, and maintenance facilities located on the property in close proximity to the pit.

From a production perspective, the mine features new and upgraded electrical controls, and upgrades to the primary, secondary and tertiary crushers, six ball mills, plus copper concentrate and molybdenum flotation circuits.

Investments were also made by BHP Billiton, the mine’s former owner in Pinto Valley’s low-grade dump leach field, its pumping extractions network, and the electrowinning and raffinate distribution systems.

And, like at its Cozamin mine, Capstone is increasing its tailings capacity to match its new Mine Plan for new tailings components including pipelines, booster station upgrades, and an extensive environmental program.

Between its Cozamin mine in central Mexico, to the Pinto Valley mine midway on the North American continent in Arizona, to its Minto mine in Yukon, Capstone Mining Corporation of Vancouver is one company that truly know what it takes to own and operate mines in different countries and it represents Canada well on the international mining scene. CMJ
A GOOD NEIGHBOUR
When a mining company employs nearly 15 per cent of the entire population from a local community, that company understandably becomes a welcomed and valued neighbour.

In fact, that’s exactly what Primero Mining Corporation of Toronto has become since it acquired the San Dimas Mine in Central Mexico in 2010, where it now employs approximately 1,100 people from a community with a total population of 8,000.

Located adjacent to the historic mining town of Tayoltita, (pop. 8,000), about a 45-minute flight, or a 10-hour drive from Durango in central west Mexico, the San Dimas Mine now employs approximately 1,100 people at the mine it bought just five years ago.

Since that purchase, the company has put into place a two-phase expansion program that is expected to increase throughput to approximately 3,000 tonnes per day by April of 2016.

San Dimas is an underground, long-hole stoping and mechanized cut-and-fill operation that uses long-haul-dump
(LHD) equipment to load a fleet of haul trucks that deliver ore to the mill.

The mill, located in Tayoltita, uses conventional crushing and grinding coupled with cyanidation and zinc precipitation for recovery of gold and silver.

Within the mill, fine crushing and single-stage ball milling is used to achieve a fine grind before passing into the leach circuit where leaching is completed in a series of tanks providing 72 hours of leach residence time.

The gold and silver is then recovered from solution in a zinc precipitation circuit. Refined gold and silver precipitate is poured into 1000-ounce doré bars using an induction furnace.

Tailings from the mine’s processing operation are pumped by a single-stage pumping station to the tailings impoundment area located in a box canyon east of the mill site.

As with all of Primero’s mining operations, tailings management is a top priority, and at San Dimas, the challenge is even greater thanks to site’s rugged terrain and steep canyons.

To achieve its mandate for safety, the company operates a dry-stack tailing deposition facility to produce a filtered “cake” that is deposited and compacted inside the tailing storage area.

In keeping with its environmental responsibilities, all exploration and development activities at San Dimas are subject to the applicable environmental laws and regulations, which include planning for the eventual closure of the mine, and reclaiming the mining properties after mining and processing has stopped.

Because of strict environmental standards set by Primero, the company has developed an Environmental Management System (EMS) to help reduce or eliminate environmental impacts from the mine and as a result of the company’s efforts, it has received a “Clean Industry” certificate from the Mexican government.

Water management, energy use and greenhouse gas emissions, plus an overall environmental awareness that includes biodiversity and aquatic monitoring are a few of the areas where the company concentrates great effort, but where Primero Mining Corporation stands out perhaps more than in any other category is in its efforts to being good corporate citizens through a corporate social responsibility (CSR) program.

As mentioned near the outset, Primero Mining employs a good percentage of people from its neighbouring community, and in alignment with Primero’s core values and social responsibility policy, the company has given back to their community by investing in significant infrastructure upgrades.

Thanks to Primero, and working in collaboration with Silver Wheaton (the world’s largest precious metal streaming company), the two companies recently constructed three new recreation facilities in the town of Tayoltita – the first of their kind to have ever been constructed there. These facilities promote health and well being, and also provide a safe place for youth to spend their time. Primero has also played a part in improving medical facilities, invested in local businesses, and continues to evaluate new ways to improve the town of Tayoltita.

Although many of these features were originally developed to serve the mining operations, they are now shared by the entire community.
community and have ultimately resulted in a broad range of social and community improvements.

Ernest Mast, President and Chief Operating Officer of Primero Mining Corporation says, “The company is committed to engagement with the community surrounding our San Dimas Mine and that’s why we engage in meaningful dialogue with local residents, community leaders and organizations in order to identify opportunities and priorities for economic improvement, training and social development.”

In recognition of the company’s commitment to where it works, the Mexican Centre for Philanthropy recently awarded Primero Mining Corporation with its prestigious Socially Responsible Company (ESR) designation for the fourth consecutive year.

Like most mining companies, however, Primero is not perfect and in 2014, it received four complaints from community members who were concerned about blasting, traffic dust and water issues.

“We took those complaints seriously,” said Mast, “and all issues were addressed, and in 2015 we are finalizing more formal channels for concerns by standardizing the protocols for receiving, recording and responding to feedback or grievances.”

While the past couple of years have been difficult for mining companies, Mast says that 2014 was a record-breaking performance for Primero with a production increase of 57 per cent over 2013, and he credits that to management’s ability to achieve or exceed its operational objectives by maintaining strict controls on costs, and “Always ensuring the health and safety of our people.”

As all mine owners and operators know, avoiding downtime, whether through personal injury or equipment failures, is critical to the successful operation of a mine. Primero maintains the belief that the most important asset of the company is its people. CMJ

The rugged GEA crudeMaster™ decanter is designed for a myriad of processes common to mining. From treating crud, clay or raffinate in the SX/EW circuit, to dewatering tailings, to cleaning up the underflow and overflow from thickeners, our equipment can help you meet your process goals.

Built to last, our process equipment can be adapted for the most demanding needs. To learn more, email sales.wsus@gea.com, call, or visit us online.

GEA North America
Centrifuges & Separation Equipment
Phone: 201-767-3900 · Toll-Free: 800-722-6622
gea.com

eering for a better world
Throughout history, miners have continually sought to improve the efficiency of extracting ore, and thankfully today, advancements in computerized and automated-mining techniques are allowing the industry to keep pace with an ever-increasing demand for the world's resources.

One of these advancements involves the increased reliance on sensor-based sorting machines, and while ore sorting is certainly not a new concept, some newer systems are now delivering impressive returns to many mining companies.

The primary objective of ore sorting is to remove waste rock before valuable time and money is spent processing it, and until the mid-twentieth century, that process was carried out primarily by hand. Today, however, thanks to companies like Tomra Systems of Norway, a keen eye has been replaced with sensor technologies capable of recognizing and separating waste rock based on a variety of physical characteristics including conductivity, transparency, shape, colour, brightness or atomic density.

Founded in 1972, Tomra Systems is now one of the world's leading sensor-based solution companies. Its first systems focused on collection solutions delivering automated equipment to grocery retailers and beverage manufacturers for handling bottles and packaging returns. This segment still represents approximately 60% of its business.

In 2004, Tomra began developing and installing sorting applications for the recycling industry for material recovery facilities, scrap dealers and metal shredder operators. It also found application in the food growing, packing and processing industry.

Today, however, the company has moved forward into the mining industry and now claims to have more than 200 mining installations around the world.

One of the first mining applications for sensor-based sorting was in the diamond industry.

According to the company, its sensor-based sorting systems were capable of scanning each individual rock processed at a diamond mine to determine if the rock was waste material or mineral bearing. A combination of sensor-based sorting technologies, one using colour and near-infrared spectroscopy (NIR) scanning, and the other X-ray transmission (XRT) significantly improved diamond recovery, reduced diamond breakage, and reduced overall energy consumption.

Once the desired rocks were identified, the physical sorting process was applied where the rock was ejected by means of compressed air nozzles.

Currently the same technology is being applied beyond gems to the sorting of base and precious metals. Crushed rock is fed into the system, scanned and sorted. By removing the lower grade waste, a significantly higher-grade ore is fed to the mill.
For miners, this provides three game-changing outcomes: the first being a significant reduction in upfront capital expenditures. By processing higher grade material, smaller plants can now be utilized to deliver larger amounts of metal.

Once in production, operators can drive high margins through the reduction of energy, water and reagent costs. The company says that the mining industry consumes 2%-3% of the world’s energy, about the same amount of energy used by the entire airline industry.

Sensor-based sorters are designed to reduce that energy consumption by 15%, as well as reduce the amount of water used by three to four cubic metres per ton of ore, claims Tomra.

Along with that, the company says that miners can now revisit lower-grade resources which may have initially been considered unprofitable. Many companies are now taking a fresh look at projects to optimize any opportunity in an ever-changing financial climate.

One such company is Toronto-based Minera Alamos Inc. The company is currently advancing its Mexican copper project, Los Verdes, towards a production decision by year end.

“Los Verdes is a modestly sized project with outstanding ore grades,” said Minera Alamos CEO Chris Frostad. “By applying sensor-based sorters to the process we are able to super charge the economics of the project and deliver the results of a much larger mine.”

The project was originally designed to mine and process approximately 3,000 tonnes per day of rock with an estimated start-up cost of just over $90 million. With an internal rate of return of approximately 34%, Los Verdes looked to be an attractive project.

Earlier this year, however, Minera Alamos went back to the drawing board to determine if there might be a more attractive approach to the project. It considered a much smaller operation (400-500 tpd), a higher cut-off of its resource through the application of Tomra’s X-ray transmission (XRT) sorting process.

Apparently, the early results were encouraging. The newly sized plant could potentially be constructed for one tenth the cost while the copper concentrate production rate dropped by only one half. The rate of return for this project is expected to increase exponentially.

“We currently have samples at Tomra’s lab in Australia where they are determining exactly how effective the sensors will be in differentiating and sorting the ore,” says Frostad. “Based on tests we performed a few years ago, we are hoping to double our ore grade prior to processing.”

The Los Verdes South deposit currently has measured and indicated resources of 7.71 million tonnes grading 0.64% copper, 0.12% molybdenum, 4.74 g/t silver and 0.07% tungsten. The company is also drilling 1,400m at its North deposit to extend Los Verdes’ life by more than 10 years.

“The mine-life issue is really why we’re drilling right now. We bought the North area a few years back, which historically had better results during private mining. It had similar grades, a cleaner concentrate, and it was easier to access,” said Chris Frostad. “And the area is open, so there’s potential to add more mill feed, and there’s also a promising induced-polarization anomaly south of there that is more intense than both of the past-producing deposits.”

The North deposit also hosts a historic resource at the past-producing Buenavista mine of approximately 1.1 million tonnes of 0.5% copper, and 0.1% molybdenum.

But the question remains; with such economic potential, why is ore sorting only now attracting more attention?

The answer comes down to speed.

First developed in the 1970s, the primary drawback of sensor-based sorting was processing speed. First generation systems simply were not economically feasible for most mining applications.

Today, however, the reliability and speed of computer processing has removed that barrier. Imaging and assay techniques have improved, thus delivering higher throughput, and more accurate density measurements have allowed for the processing of smaller particles.

Beyond its financial benefits, sensor-based sorting also delivers an environmental advantage. First, it is a completely dry and chemical-free process. Second, it ultimately reduces the amount of processed tailings, thereby requiring smaller tailings containment and treatment facilities.

Sensor-based machines sales in mining are expected to grow at around 15% per year, however, that growth will be contingent on new applications and the development of new technologies.

Sensor-based sorting like that at Minera Alamos’ Los Verdes South mine in Mexico is still a technology yet to be fully accepted by the mining industry but the need for more financially effective systems is expected to draw more attention in the future because of economic benefits.  

More drilling.
“Long-term liability” are three words that form one of the more worrying expressions for many mining companies today.

In many cases, those liabilities come from traditional water-covered tailings storage facilities (TSF) that require perpetual maintenance, but they have also become a significant operational and financial burden for many companies.

As well, companies are increasingly concerned about their ‘social licence to operate’ – which can be quickly lost if the facilities’ dams are overtopped or give way, releasing tailings and water.

A case in point: the aftermath of the Mount Polley mine tailings disaster of August, 2014 in central British Columbia, in which some 10 million cubic metres of water, and 4.5 million cubic metres of slurry were released into downstream watercourses.

Following the recommendations of the Independent Expert Investigation and Review Panel in April, 2015, a group of Alaskan Aboriginals, B.C. First Nations, private businesses, scientists and others signed a letter asking the B.C. government to halt the permitting of wet-tailings facilities for new and proposed mines in the province.

When public concern about anything increases, politicians take notice, and regulations tend to follow. This usually results in concern from financial sources, causing difficulty for companies that are perceived to be vulnerable to long-term liabilities stemming from current or past operations.

Accordingly, there is increasing interest by mining companies in ways to reduce the size of their tailings ponds, develop alternatives to maintaining large ponds of water, or even eliminate them entirely. This can help them move towards the elusive goal of “walk-away closure.”

Can the threat from tailings be neutralized?

Traditional tailings disposal includes slurrying of the tailings materials for transport by pipeline to the TSF. This transport method results in large volumes of water reporting to the TSF where this slurry water, combined with runoff from normal precipitation and extreme storm events, results in ponds of water on the surface of the TSF.

Depending on the chemistry of the tailings, water covers (or alternative cover systems) are required to prevent Acid Rock Drainage.

Alternative tailings-handling and disposal methodologies have been developed over the past few years. Here are three of the more common alternatives, which can also reduce or avoid the need for water-covered TSFs:

- Paste or thickened tailings on surface – One way to help reduce the amount of water going to the TSF is through thickening the tailings, so that the product moves through the pipe in a
plug-flow rather than a slurry. One major benefit of this approach is that the tailings will generally not segregate, as happens in slurry deposition, so the result is a relatively homogeneous mixture. This in itself can help maintain saturation of the tailings, and prevent oxidation and acid generation.

Dry-stack disposal on surface – This method allows tailings to be placed in a dense state (i.e. compacted). As with thickened tailings or paste, in high-precipitation environments, it won’t eliminate water from the TSF. However, tailings can be made much more stable, and with appropriate decommissioning (pending the presence of sulphides), this can essentially become a walk-away solution for many tailings deposits. However, this method is the most energy intensive discussed here.

Underground backfill using paste tailings – One method that is more promising along the road to walk-away closure is putting the tailings back underground. Backfilling supports the working of the ore body next to a worked-out stope, as well as helping manage the risk of subsidence and collapse of the workings post-closure. Groundwater rising in the mine after closure will help to keep the tailings away from air, and help prevent acid generation. However, this method too has its downside: only about half of the rock pulled out of the mine as development rock or ore can be fitted back into the worked-out stopes, leaving the rest to be disposed of on surface.

Reducing the volume and acid-generating capacity of tailings

Given the limitations on these methods, and the growing public pressure to avoid water-covered TSFs, mining companies can benefit from re-thinking their approach to ore processing.

In some cases, this could have the potential to generate additional revenue, but more importantly, there could be opportunities to reduce their potential environmental risks.

The key lies in being willing to consider broader horizons, as regards to the kind of business they are in. This has to do with what might be called “mining myopia” – that some mining company executives would declare, “We’re a gold-mining company,” or perhaps, “We focus on copper.” A gold-mining company might recognize that the ore they are working contains silver that might be extracted. For example, the ore may have 2% sulphides, and by processing you may be able to remove the sulphides in perhaps 5% of the ore. This sulphide concentrate could then be evaluated for further processing to neutralize the sulphides and to recover additional product.

But the true value of further concentration lies in being able to remove the acid-generating and metals portion of the tailings, or at least reduce them to the point that they do not need special disposal such as a water-covered tailings impoundment.

Being able to produce tailings that are environmentally benign opens up all kinds of possibilities for tailings disposal, in that there are few or no long-term liabilities attached to those tailings.

Previously, it might not have been worthwhile to pull more mineralization out of the ore. However, given the costs and liabilities associated with the disposal of tailings that contain hazards such as salts, metals and acid-generating potential, rendering those tailings benign can be well worth the effort and cost.

Squeezing value (and liability) from the waste stream

How should the sulphide-bearing concentrate be processed? It depends on a range of factors.

In an established mine camp in Sudbury, Ontario, for example, the wide range of metallurgical facilities in the area means that it is quite likely best to truck the concentrate to another facility for processing.

If there are no smelters or other processing facilities within a reasonable distance, however, it may be feasible to set up a processing facility on or near the mine’s mill. This processing facility might be owned and operated by the mine, or by a third party that buys the concentrate for processing. Whether there is additional processing of concentrate depends on what minerals there may be in the concentrate.

If removal of those minerals is not practical, other options should be considered.

In underground mines, it is best to give the sulphide-bearing waste product priority when it comes to finding space underground, and making sure that it is in a place that will be below the water-table when dewatering stops. That way, this hazardous portion of the mine’s waste stream is locked away underground, away from air and free of liability.

In open-pit mines, the high-sulphide part of the waste can be encapsulated and disposed of in a part of the TSF that will be below the water table after dewatering stops.

Taking extra care with the parts of a mine’s waste stream that contain environmentally hazardous materials, separating them out for special treatment, is a cost that many mining companies might think not worthwhile, but with the fast-growing concern about the risks and liabilities stemming from conventional TSFs, this is an area of good future potential.

*LEON C. BOTHAM, MSCE, P.Eng. is a Senior Geotechnical Engineer specializing in Mine Waste Management and the design and construction of other mine infrastructure. He is Vice-president of Clifton Associates, Saskatoon, SK.
When evaluating a vehicle fire suppression system, it is important to know what choices are available. The most fundamental decision to make is whether to opt for a stored pressure system, or a side-cartridge system.

A stored pressure system holds both the fire-fighting agent and nitrogen that propels it through the distribution network in the same tank. On the down side, this type of system has a much greater likelihood of leaking through its pressure gauge, a fact which is amplified in situations where there is significant vibration. This can be a major risk as it can lead to poor performance, or even system failure. However, in less demanding situations they can be sufficient.

Alternatively, side-cartridge systems store the nitrogen that acts as a propellant in a separate, sealed tank. This makes the entire system much more resistant to leaking, which is key to their robust nature.

These types of systems dominate in mining, forestry and other rough and tumble industries. If ruggedness is a concern, this type of system is the better choice.

Rubber hose is used to varying extents to create a fire suppression system's distribution network. However, the more hose that is used, the more potential there is for wear and tear to compromise the system due to drying and cracking or even being cut.

Stainless steel tubing can replace much of the work hose does. Not only does it last longer in a high-heat environment, it does not require extensive welding to install.

A “cleaner” looking finished product is not only more attractive, it serves the practical purpose of making it easier on technicians working in the engine compartment since it is less cluttered.

Beyond that, the stainless steel tubing doesn’t need to be replaced, at the end user’s expense, every few years like the hose does. Again, if ruggedness is a concern, tubing is superior to hose, especially when the cost of maintenance over time is taken into account.

Another design feature to look for is hinged nozzle caps. Not only do they keep debris from clogging the nozzle, they also negate the possibility of MSHA citations for missing blow off caps, a common inconvenience with a high price tag.

When considering the actual agent used in a fire suppression system, the main concern, beyond its ability to combat a fire, is the impact it has on the environment after discharge.
Due to its nature, liquid agent cannot be used below the freezing point without some chemical amendment. One chemical frequently used for this purpose is ethylene glycol (antifreeze). Though it gets the job done, it is deemed by OSHA to be a hazardous material.

Not all brands chose to utilize this harsh chemical as a result. When shopping for a fire suppression system, if you plan to use a liquid agent as part of the solution, be sure to ask about this important factor.

Because it both cools hot surfaces and has a suppressing effect, utilizing a liquid agent for firefighting is sensible. However, when used instead of dry chemical, the tremendously fast suppressing ability of the A:B:C powder is lost. There is no reason for this compromise to be made.

As the standard of the vehicle fire suppression system market for nearly 50 years, dry chemical powder’s value has never wavered. Because it fills space in all three dimensions when discharged, it has the capacity to knock down flames wherever they may be in an engine compartment.

On the other hand, liquid agent requires direct application to the targeted area and it has to have an unobstructed “sight line” and be in close proximity, something which can be a challenge in a crowded engine compartment.

This physical constraint means that more nozzles are required to gain the same amount of coverage, which in turn means more agent is needed. The result is larger/more tanks. If space, weight or costs are a concern, an alternative to a liquid-only system should be considered.

Instead of focusing on the value of one of the two agent types, utilizing the two in concert is an effective approach to take. When using a “dual agent” system, which has both a liquid and a dry chemical system deployed at the same time, the suppression of fire is fast and thorough and superheated engine surfaces are cooled significantly.

This latter fact is important because it dramatically reduces the likelihood of a reflash fire resulting from a surface which remains hotter than the flashpoint of a fuel that remains present.

Incorporating an engine shutdown function to limit the chances of fuel continuing to flow from compromised hose lines is always a wise choice regardless.

If the machinery being protected has large, hot-running diesel engines, especially if they are Tier 4 compliant, then a dual agent system warrants a close look. CMJ

*Information for this article provided by AFEX Fire Suppression Systems.
Setting up shop near your customers makes good business sense, and that’s exactly what B&D Manufacturing did more than 35 years ago when it opened its doors to the mining community in the Sudbury area.

In fact, since the company was founded in 1980 by two underground mine machinists, Gerald Dubois and Wolfgang Bauer, its location in Chelmsford, ON., on Regional Road 15 just west of Sudbury has been the place where customers from the mining community have come to find answers to their equipment problems.

Originally established as the OEM of a product known as the Portable Align Boring Machine, a product that Dubois and Bauer identified as something the market needed to help reduce the amount of downtime involved with align boring machinery underground, the company gradually expanded its products and services to include other support equipment for the mines and mills, open-pit trucks, open-pit shovels and other construction tools and machinery.

To further explain the founders’ invention, the portable align boring machine eliminated the need to bring the larger underground equipment to the surface for re-boring and re-aligning (something often taking upwards of a week to accomplish).

The new device enabled mine operators to perform repairs on-site, underground, in as little as one day. Within three years, the company was exporting the machines throughout North America.

In keeping with innovation and moving forward, the company expanded through the acquisition of Alo-Tech, a fabrication company, to manufacture aluminum products, such as lightweight, heavy-duty stands, wheel chocks, stairs and platforms, built to meet or exceed industry standards and improve safety.

The company also has two dedicated Field Service departments. The Field Mechanical department specializes in crusher evaluations, installations and repairs, while the Field Machining department specializes in portable align boring and on-site bore welding. Combined, the two Field Service departments provide on-site millwrights, welders and machinists.

The company continues to invest significantly in new product development, manufacturing fully engineered and certified complex component handling equipment and fabricating custom-designed aluminum products to meet customers’ unique needs for safety solutions and increased efficiencies.

MADE IN CHELMSFORD

SMALL-TOWN COMPANY HAS CUSTOMERS WORLDWIDE By Russell Noble
Its OEM line supports large haul trucks and heavy shovels at surface operations, as well as heavy equipment operating in underground mines. This includes the B&D Super Jack, developed to provide industry with a machine that not only lifts, but supports the entire end of a haul truck.

Before this, air jacks were used to lift only one tire at a time, creating potentially unsafe conditions for maintenance personnel because the truck was not securely balanced.

It was this call for safety that resulted in the development of the company’s Swing Shaft Changer, a platform to perform repairs on large shovels. Similarly, a Wheeled Multi Handler, and a Tire Handler Station offers safer alternatives to performing work on open-pit equipment.

As mentioned earlier, the company continues to enter new international markets through a team of sales professionals and a broad network of distributors in several countries, including North and South America, South Africa and Australia.

Since day one, employees have been the company’s number one resource, and safety is of utmost importance.

In fact, the company has a full-time Health & Safety Manager on staff, which is not common in many companies, and its employees are encouraged and supported by management to engage in continuing education in order to further their knowledge and increase their skill sets.

Proof of this commitment to safety came in May 2014, when B&D Manufacturing reached a milestone by surpassing 1,000,000-manhours worked with no lost time.

In addition to being safety conscientious in the shop, the company has also been recognized by clients in the field for operating a very safe working environment at their sites.

Beyond the actual work site, being a good corporate citizen ranks high in the company’s business plan and that’s why it has an Environmental Management System in place to make certain that it complies with all environmental legislation and regulations governing its operations.

When it comes to impact on the environment, the company strives to manage all aspects of its business.

For instance, in the design of its new facilities in 2007, it took many steps to decrease the environmental footprint, including the installation of a solar wall to help reduce natural gas consumption by nearly 35,000 cubic meters.

In order to reduce water usage, it also refrains from watering or using pesticides and fertilizers at its property. Rain water from the building’s roof is captured in a holding tank and recycled as grey water.

The entire 47,000-square-foot facility operates under high-efficiency lighting.

In all of its endeavours, B&D Manufacturing of Chelmsford, Ontario, obviously puts “improving safety” at the top of its list. and regardless of whether it’s in the design and manufacture of new and innovative equipment and products, or in the way it works on the mine site, it’s one company that deserves recognition for its contribution to the Canadian Mining Industry.
Dear Prime Minister Trudeau:

Congratulations on your election victory!

As you settle into your new office I am sure you are struck by the awesomeness of your accomplishment and of country which has chosen you.

Ours is a country rich in human and natural resources. Within the rich natural resources you may, should you choose, find a means to better the lives of Canadians and the world, and particularly to change for the better the circumstances of Canadians in remote communities.

As a participant in the mining industry in Canada I have some suggestions for how to strengthen the Canadian economy and make Canada a proud global citizen.

I am sure you have received binder after binder of briefing notes on various sectors of the Canadian economy. If I may, I want to leave you with a few facts about the mining industry in Canada; namely that our industry:

- employs close to 400,000 Canadians;
- has over the past ten years paid approximately $70 billion in taxes and royalties to Canadian governments; and
- is a global leader with 70% of global public markets finance for the mining sector in 2014 being raised in Canada.

This paints a pretty good picture. What is missing, however, is that this is an industry in crisis. You may have also learned that:

- mining finance is down 60% since 2007, with equity finance down 80% since 2007;
- mining exploration budgets were down 26% in 2014 and sure to be down again in 2015 when the books are closed; and
- by mid-2015 the market value of mining companies was down 30% from the same period in the prior year.

Combined with declining commodity prices, this means that less is being made by producers, less is being raised by explorers and developers with the result that over time fewer project will be operating and developed and fewer Canadians will be employed in the sector. That means fewer Canadians working, raising families, contributing to their communities and paying taxes.

I know this fact will resonate with you given your pledge to act on the inclusion of Aboriginal people in Canada. When mining gets hurt though poor markets or bad policy, Canadians get hurt, and Aboriginal peoples in Canada get hurt disproportionately.

The good news is that there is a great deal that you can do to help. Even better is that many of the ways to help are consistent with your campaign promises.

Infrastructure is critical. The costs for miners of operating in the north are substantially higher than other regions. This isn’t due only to seasonal factors. A huge component is the lack of critical infrastructure: roads, power plants, ports and accommodation. When you prioritize promised infrastructure spending please remember that when you build a road or bring electricity to a remote mine site you are almost certainly bringing these facilities to the adjacent communities many of which are populated by Aboriginal peoples.

Spend your political capital on the relationship with Aboriginal peoples. While infrastructure and investment will go a long way to improve the lot of Aboriginal peoples in Canada, they and the mining industry need the benefit of government leadership in settling a framework for working together.

Instead of leaving communities and companies to muddle through uncertain consultations and negotiating secret impact benefit agreements, use your capital to set clear timelines, rules and processes to ensure industry has certainty and transparency to ensure communities have the benefit of the jobs, growth and infrastructure that allows culture to flourish.

Bring financial certainty to the sector. Publicly and unequivocally commit to maintaining federal flow-through tax treatment to encourage exploration. In this capital constrained environment everything that can be done to assure industry that the next round of exploration financing can be raised will help.

Yours truly,

A Canadian in Mining

P.S. - I would be remiss if I did not thank our industry association, the Prospectors and Developers Association of Canada (PDAC) for their great work, particularly the background work behind most of the facts referenced above. I recommend that you and your ministers spend some time with them talking about how we ensure that Canada continues to be a global leader in mining and reaps the benefits in terms of jobs, technology and infrastructure that goes with that distinction.
PROFESSIONAL DIRECTORY

DON’T MISS THIS OPPORTUNITY TO GROW YOUR BUSINESS IN 2015.

List in the Canadian Mining Journal’s Professional Directory

Cost as low as $250.00 per issue
Contact:

ROBERT SEAGRAVES
416-510-6891 Fax: 416-447-7658
rseagraves@canadianminingjournal.com

JOELLE GLASROTH
416-510-5104 Fax: 416-447-7658
jglasroth@canadianminingjournal.com

Reach the decision makers that matter by advertising with Canada’s only AAM audited mining publication.

In continuous publication since 1882, Canadian Mining Journal serves the operations segment of Canada’s mining industry. It provides its readers with pertinent information on the latest equipment, methods and technologies used in mining and mineral processing. With its AAM audited circulation, and multi-media delivery, CMJ guarantees advertisers exposure to the buying influences at the mine site, mill and head office.

Contact us now to have your message seen by Canada’s most up to date mailing list of mining and mineral processing professionals.

AAM Audited Circulation

10,210*
the only Audited mining publication in Canada.

Readership: 27,000**

www.canadianminingjournal.com

averages 32,000 unique visitors each month.***

*June 2015 AAM Audit Statement
**Statistics based on responses to our July 2015 readership survey
***Google Analytics July 2015

PLEASE CONTACT:

ROBERT SEAGRAVES • rseagraves@canadianminingjournal.com • 1-416-510-6891

JOELLE GLASROTH • jglasroth@canadianminingjournal.com • 1-416-510-5104

Toll Free Canada and USA: 1-888-502-3456 ext. 2 or ext. 43734 for Robert Seagraves, ext. 43702 for Joelle Glasroth

Toll Free Canada and USA: 1-888-502-3456 ext. 2 or ext. 43734 for Robert Seagraves, ext. 43702 for Joelle Glasroth
Harnessing information technology to drive productivity gains

By Iain Thompson

In the mining sector, if someone is talking about productivity, they usually mean cost-cutting initiatives which have tended to yield modest or short-term results at best. According to EY’s global survey, (Productivity in Mining: Now Comes the Hard Part) mining company leaders are recognizing that meaningful performance improvements require new thinking – admittedly more complex, but better focused on generating value. And information technology is at the root of productivity opportunities that may transform the sector.

Thriving in today’s challenging mining industry means moving beyond point-productivity solutions to adopt end-to-end solutions. It starts with asking the right questions, and having the systems in place to unlock the data that enable leaders to harness productivity improvements. After all, the best business decisions in dynamic conditions require timely, laser-focused information. Make no mistake; the impact can be significant. Our survey revealed companies that use fact-based data outperform their peers by 20%.

To achieve competitive advantage through IT enablement, companies need to embrace IT less as a “keep the lights on” cost centre and more as a strategic tool for enabling better operating models and practices. And that requires leaders to not only have a clear grasp of the IT landscape and its value drivers, but also to make the right technology investments.

The current state of technology

When companies were growing rapidly through acquisitions, few companies took the opportunity to standardize business processes and rationalize software investments. Companies today are still running multiple instances of ERP systems across their operations. Those that successfully standardize processes will be in a far better position to improve productivity than those that haven’t.

Over the past decade, most of the IT deployed at a site level has typically been single-user desktop software supporting technical tasks. A new generation of server-based solutions, such as dispatch systems and production management systems, can support operating decisions across teams at mine sites. Deployed effectively, these technologies enable productivity, yet many companies are not integrating these solutions with other existing systems, making it harder to benefit from the information across value-creating processes.

Fortunately, software vendors have recognized the opportunity to prepackage integration across the entire value chain. We’re seeing more consolidation than ever in a software vendor market that has been traditionally fragmented. As a result, when selecting technologies, broader consideration should be given to:

- Defining the role of the application in your company’s broader operating strategy
- Selecting strategic vendors
- Assessing solutions vs. tools
- Making solution decisions by looking across value creating processes rather than functional silos
- Testing how the information is integrated between site-based systems and the ERP portfolio
- Seek out the IT advantage

While the IT-mining intersect has changed significantly over the last decade, many mining companies have yet to take advantage of the enhancements these changes introduce. The best leaders are starting to realize the real benefits of using IT to enable new operating models and practices. For example, if applied strategically, technology can help to address labour challenges, and improve capital productivity and material management.

Developing an integrated, strategic roadmap for deploying technology starts with asking the right questions:

1. What is the role of IT in my organization today?
2. What is the new role for IT in enabling strategy and what needs to change within the function?

Answers are likely to include everything from restructuring IT departments to ensure they have a place at the leadership table and can become a strategic enabler to the business, to implementing appropriate governance to encourage standardization of software vendor and software packages.

When it comes to improving productivity in today’s dynamic mining sector, strategic use of information technology can break down silos and help achieve end-to-end solutions that will ultimately drive business success.

Iain Thompson, Associate Partner, Advisory Services, EY.
Solutions to Mining’s Toughest Challenges

Drill Jumbos • Scalers • Specialty Equipment • Roof Drills • Powder Loaders

J.H. Fletcher equipment solutions increase productivity and maximize safety. Learn how today by going to www.jhfletcher.com or calling 304.525.7811. Email us at sales@jhfletcher.com. Let us take the hurdles out of your operation.

J.H. Fletcher & Co. cannot anticipate every mine hazard that may develop during use of these products. Follow your mine plan and/or roof control plan prior to use of the product. Proper use, maintenance and continued use of (OEM) original equipment parts will be essential for maximum operating results. 2014 J.H. Fletcher & Co. All Rights reserved.
Metso Haul Truck Solution keeps your trucks moving while delivering real value to your business

That’s how we make the big difference, the Metso Way.

It’s tough enough to squeeze maximum profitability out of a mining or aggregate operation. Unproductive trucks make it even tougher. Metso rubber bed lining is designed with one thing in mind - to maximize the availability and performance of your trucks, while reducing your costs for service and maintenance. We look beyond the lining product and care for your truck operation.

With Metso Haul Truck Solution, everything is reduced - downtime, spare boxes, maintenance costs and more - the only thing that increases is your profitability. Metso haul truck lining is the best choice to keep your trucks moving.

Find out how Metso Haul Truck Solution can make the big difference for your fleet at metso.com/HaulTruckSolution

#TheMetsoWay