Last year marked a turning point for the mining industry, and 2019 brings even more possibilities for companies to position themselves for the next stage of growth, exploration and development. While recent mergers were a sign of a wave of consolidation that will help companies better compete for capital, we can expect even more M&A activity in the near future. That creates a cascading effect of further deals as companies sell off non-core assets, which brings new opportunities for management teams to build the next big Canadian mining company.

— Dean Braunsteiner, National Mining Leader, PwC Canada

Mining companies registered steady growth in 2018, increasing their revenues and cash reserves, even as prices for most commodities fell.

Even with that solid performance, the aggregate valuation of the 218 mining companies on the Toronto Stock Exchange (TSX) fell almost 13% in the 12 months ended Dec. 31, 2018, a decline that was in line with the broader market’s slide.

Mining stocks managed to recover many of those losses in the first quarter of 2019 as the overall TSX market value improved, but the market’s lacklustre sentiment toward the industry reflects a wait-and-see approach among investors. Liquidity fell for
the second year in a row, with the volume and value of TSX mining shares traded down by 21% and 20%, respectively.

Many investors have been looking at alternative trading opportunities, including royalty and streaming businesses, commodity exchange-traded funds and emerging industries like the cannabis sector. The decline in liquidity for mining shares may also be a sign that some investors are on the sidelines as they wait to see how current industry shifts and trends play out.

Smaller and mid-size mining companies have also had to deal with the trend toward passive investment vehicles like ETFs. With increased competition for investment dollars, some companies find themselves at a disadvantage on the equity markets.

The sector did see renewed deals activity last year. The mining mega deal returned in 2018 after a lengthy hiatus, as large companies decided to take advantage of their improved balance sheets to begin replenishing reserves and optimizing their portfolios. The previously announced marriage of Potash Corp. of Saskatchewan Inc. and Agrium Inc. to create Nutrien Ltd. marked the beginning of this cycle, followed a year later by Barrick Gold Corp.’s purchase of Randgold Resources Ltd.

The trend continued into the beginning of 2019 with highly publicized deals involving Goldcorp Inc. and Newmont Mining Corp., which then also found itself the target of a takeover bid by Barrick Gold. In the end, Newmont and Barrick Gold reached an agreement to form a joint venture related to the two companies’ assets in Nevada. And in April 2019, Lundin Mining Corp. announced a $1-billion deal to acquire a Brazilian copper and gold mine from Yamana Gold Inc.

The heightened level of deal activities, most of which have been in the gold sector, may well spark further moves among intermediate players seeking to grow into multi-project companies. A new phase of industry consolidation could pave the way for more exploration and mine development and boost investor interest and activity.
The prospect of more diversified global players with sufficient scale and market capitalization to attract passive investors, along with the emergence of mid-tier miners looking to make acquisitions, could inject some adrenaline into the market and lift valuations. But companies should expect transactions to face intense market scrutiny given that in previous periods of merger activity, some management teams were unable to achieve the synergies they had promoted. Barrick Gold’s success in navigating a zero-premium offer for Randgold Resources reflects some of the shifts occurring in the industry as companies reassess their approaches to deals.

“It’s important that companies continue to deliver on the promise of returning profits back to shareholders and actually having a return on investment capital,” says Erfan Kazemi, Chief Financial Officer of Sandstorm Gold Ltd.

“If that doesn’t happen, I think the general investment community is going to continue to shy away from the industry, and that’s probably one of the challenges we face.”

About this report

This report is one of three publications in PwC’s annual Canadian Mine series, which looks at the realities and priorities of public mining companies headquartered in Canada. This report covers all TSX-listed mining companies, some of which may not have their headquarters in Canada, and focuses on a financial analysis of the top 25 listings by market capitalization. It complements our Junior Mine 2018 report, which analyzes the top 100 listings on the TSX Venture Exchange (TSX-V).

As part of our Canadian Mine series, we interview different players and experts in the mining industry to better understand how they see the outlook for the sector. For this report, we’ve spoken to Erfan Kazemi, Chief Financial Officer of Sandstorm Gold Ltd. We’ll be speaking to further industry players and releasing additional articles based on the insights they share.

All figures used in the financial analysis are in Canadian dollars unless otherwise noted. The results of companies that report in other currencies have been translated at the closing Canadian dollar exchange rate for the respective year. The financial results reported here cover the 12-month period ended December 31, 2018.
The aggregate valuation of all mining companies on the TSX declined 12.7% in 2018, to $253.9 billion, compared with a 10.8% decrease in the market capitalization of the entire TSX market.

Most mining issuers began to rebound in step with a broader market comeback and had recovered 2018 losses by the first quarter of 2019. The sector remained the third largest, comprising 10% of the TSX’s total value, behind only financial services (29%) and industrial products and services (12%).

Performance was hampered by a downward shift in most commodity prices, following a
strong showing in 2017. Spot prices for base and precious metals decreased across the board. Zinc tumbled 25%, copper 17% and nickel 6%. Even cobalt and lithium prices, which have registered strong gains over the past five years, suffered double-digit declines in 2018. Prices for several base metals, including copper, zinc and nickel, have shown significant gains in the first few months of 2019.

Several TSX-listed mining companies were insulated from some of the effects of weaker prices for metals in 2018 thanks to their high exposure
to gold, which remained relatively stable. Bullion prices ended the year down only 2%.

Despite some market weakness in 2018, 10 new mining listings made it to the TSX during the year, with seven companies graduating from the TSX Venture Exchange. Even with those entrants, the total count of mining companies on the TSX continued to decline, falling to 218 listings from 224 in 2017.

In total, mining companies raised almost $3.4 billion of equity capital, 36% less than a year earlier, while the number of financings decreased by 19% to 158.

Market capitalization by industry group of the total TSX

- **Financial services**: 29%
- **ETFs**: 6%
- **Comm. & media**: 1%
- **Financial services**: 12%
- **Mining**: 10%
- **Life sciences**: 2%
- **Industrial products & services**: 12%
- **Real estate**: 8%
- **Oil & gas**: 8%
- **Technology**: 4%
- **Clean technology & renewable energy**: 4%
- **Utilities & pipelines**: 9%
- **Consumer products & services**: 7%
- **Communication & media**: 8%
- **Consumer products & services**: 1%
- **Closed-end funds**: 103
- **Oil & gas**: 72
- **Real estate**: 60
- **Life sciences**: 48
- **Technology**: 53
- **Clean technology & renewable energy**: 32
- **Comm. & media**: 24
- **Utilities & pipelines**: 22
- **ETFs**: 616

Source: TMX website
The top 25: Powered by potash and gold

**Nutrien overshadowed other** members of the top 25 during its first year of operation as the merged entity of Potash Corp. of Saskatchewan and Agrium. With a market capitalization of approximately $40 billion, it was almost twice as large as No. 2-ranked Barrick Gold ($21.5 billion) and more than double the valuation of No. 3-positioned Franco-Nevada Corp. ($17.0 billion) as of Dec. 31, 2018. Barrick Gold has since narrowed the gap with Nutrien as a result of the gold giant’s merger with Randgold Resources in January 2019. The combined company had a valuation of $32.1 billion as of March 31, 2019, while Nutrien had also risen to about $42.6 billion.

Nutrien, the only potash producer in the ranking, was one of the few companies among the top 25 supported by a rising commodity price. Potash spot prices gained 21% in 2018, due in part to strong demand for fertilizers and producer discipline.

But gold remained the most dominant commodity among the top 25, with 21 companies having exposure to the precious metal, up from 19 a year earlier. Fourteen companies have exposure to copper and four to nickel. As for zinc and silver, nine companies have exposure to those metals.

Earnings before interest, taxes, depreciation and amortization were down 1.1% for the group, while lower prices for gold and most base metals put pressure on EBITDA margins (down to 31.8% from 35.3% the year before). Net profit fell by 70.9% for the group, largely due to non-operating results at two of the bigger mining companies.

Cash flows from operations improved by 1.8%, but cash flows from financing activities decreased. Companies opted to direct their cash towards share buybacks or dividends, as well as to paying down debt. The group’s combined debt-to-equity ratio decreased to 36.2% from 41.4% at the end of the previous year.

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**Income statement items for the top 25 mining companies** ($ billion)

<table>
<thead>
<tr>
<th></th>
<th>Dec 2018</th>
<th>Dec 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total revenue</td>
<td>89.4</td>
<td>81.3</td>
</tr>
<tr>
<td>Net income</td>
<td>2.3</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Source: S&P Global Market Intelligence and PwC analysis
Kirkland Lake Gold Ltd. and OceanaGold Corp. proved to be the strongest performers in 2018 in terms of valuations. Their market capitalizations surged by 87.3% and 55%, respectively.

Among the companies leaving the top 25 ranking last year were Alamos Gold Inc. and Hudbay Minerals Inc., both of which saw their share prices decline during much of 2018 and have since begun recovering during the first few months of 2019.

Katanga Mining Ltd., a copper and cobalt mining subsidiary of Glencore Plc, also dropped out, as its valuation fell 71.9%, in part over issues with the company’s production numbers and a review by the Ontario Securities Commission. Katanga also suffered from the decline in cobalt prices and as a result of a temporary suspension of cobalt exports and sales from a project in the Democratic Republic of the Congo.
## Top 25 mining companies

For the 12-month period ended Dec. 31, 2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company Name</th>
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<tbody>
<tr>
<td>01</td>
<td>Nutrien Ltd.</td>
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<tr>
<td>02</td>
<td>Barrick Gold Corp.</td>
</tr>
<tr>
<td>03</td>
<td>Franco-Nevada Corp.</td>
</tr>
<tr>
<td>04</td>
<td>Teck Resources Ltd.</td>
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<tr>
<td>05</td>
<td>Agnico Eagle Mines Ltd.</td>
</tr>
<tr>
<td>06</td>
<td>Wheaton Precious Metals Corp.</td>
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<tr>
<td>07</td>
<td>Goldcorp Inc.</td>
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<tr>
<td>08</td>
<td>First Quantum Minerals Ltd.</td>
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<tr>
<td>09</td>
<td>Kirkland Lake Gold Ltd.</td>
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<tr>
<td>10</td>
<td>Cameco Corp.</td>
</tr>
<tr>
<td>11</td>
<td>Kinross Gold Corp.</td>
</tr>
<tr>
<td>12</td>
<td>Turquoise Hill Resources Ltd.</td>
</tr>
<tr>
<td>13</td>
<td>Lundin Mining Corp.</td>
</tr>
<tr>
<td>14</td>
<td>B2Gold Corp.</td>
</tr>
<tr>
<td>15</td>
<td>OceanaGold Corp.</td>
</tr>
<tr>
<td>16</td>
<td>Pan American Silver Corp.</td>
</tr>
<tr>
<td>17</td>
<td>Yamana Gold Inc.</td>
</tr>
<tr>
<td>18</td>
<td>Endeavour Mining Corp.</td>
</tr>
<tr>
<td>19</td>
<td>Ivanhoe Mines Ltd.</td>
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<tr>
<td>20</td>
<td>IAMGOLD Corp.</td>
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<tr>
<td>21</td>
<td>Centamin plc</td>
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<tr>
<td>22</td>
<td>Osisko Gold Royalties Ltd.</td>
</tr>
<tr>
<td>23</td>
<td>Nexa Resources S.A.</td>
</tr>
<tr>
<td>24</td>
<td>Pretium Resources Inc.</td>
</tr>
<tr>
<td>25</td>
<td>Detour Gold Corp.</td>
</tr>
</tbody>
</table>
M&A back on the agenda

The dominant theme to emerge from 2018 was the excitement and possibilities created by the return of big deals activity, which injected much-needed liquidity into the mining sector after years of growing fragmentation, especially among gold companies.

Not only are there fewer large-scale producers today than a decade ago, but the leading players have also gotten smaller. The top five mining companies accounted for 43% of the sector’s total TSX market capitalization last year, down from 57% in 2008. Expanding the sample to both the top 10 and top 25 mining companies shows a similar pattern. These declines make the companies less attractive to large investment funds that have scale and liquidity requirements.

Competition for investment dollars has grown more intense across the entire mining industry in recent years, as investors shift funds to what they consider to be less risky royalty and streaming companies and ETFs that hold physical inventories of gold and other commodities. A significant amount of risk capital has also gone into the emerging cannabis sector.

The January 2018 merger of Potash Corp. of Saskatchewan and Agrium to create Nutrien signalled a new phase in the latest deal cycle. But the greatest opportunity for mergers and acquisitions lies in the gold sector, where the largest mining companies command a much smaller portion of the market than their counterparts in the base metals field. In January, Barrick Gold closed its US$5.4-billion purchase of Randgold Resources. Newmont Mining and Goldcorp are scheduled to close their US$10-billion merger in the second quarter of this year.

The joint-venture deal between Barrick Gold and Newmont Mining, which had only recently announced its plans to merge with Goldcorp,
was a notable development that other large gold mining companies could look to emulate as they examine their own options for maximizing value and achieving scale. Other significant deals taking shape this year include Pan American Silver Corp.’s completion of its acquisition of Tahoe Resources Inc.

The mergers follow an economic downturn that struck the industry earlier in this decade, which forced companies to preserve capital. With the industry now enjoying stronger balance sheets, many companies are looking to launch new production and development projects.

On top of that, large deals like the Barrick-Randgold combination will likely lead to another series of transactions as the newly merged entities move to sell off non-core assets. Mid-sized miners will be looking to purchase some of those assets and may merge or form joint ventures in an effort to become more competitive and attractive to larger investors.

“There seems to be a level of mania or excitement about mergers right now in the mining space. If you are a mid-tier producer, it would be nearly impossible not to have been approached by an investment bank pitching an idea to merge with another mid-tier mining company,” says Sandstorm Gold’s Erfan Kazemi.

The renewed deals landscape represents a significant opportunity for the mining industry. The heightened deal activity should spur investor interest in the sector as consolidation leads to more efficient allocation of capital and reduced competition for a limited supply of good assets.
Refocusing the approach to digital transformation

While mergers, acquisitions and joint ventures are one way the mining industry is responding to commodity and business pressures, mining companies also have a significant opportunity to improve the performance of their operations by refocusing their approach to digital transformation.

The mining industry has already been making many efforts to explore the promise of digital technologies. In January 2019, for example, a number of TSX-listed mining companies—Goldcorp, Wheaton Precious Metals Corp. and Kutcho Copper Corp.—announced a collaboration to build a new mining supply chain solution based on IBM Corp.’s blockchain platform. Other developments have focused on the use of artificial intelligence to better predict gold deposits, while several companies have been investing in efforts to boost energy efficiency through changes like increased electrification.

The industry’s efforts to explore new technologies are promising, but to truly transform and create value, mining companies need to focus on more holistic change across their management systems and functions. Mining companies face a number of challenges when it comes to making holistic changes, particularly due to the tendency of the different areas of the business—such as maintenance, production and support functions like human resources—to operate independently as silos. Given that mining is essentially a physical flow of material, it’s important to understand the main drivers of variability and better coordinate and integrate all business functions to make sure the whole system performs to its true capability.

Data and information are important foundations...
for increasing collaboration among the different functions. If bouts of absenteeism or worker shortages are hurting production and efficiency, for example, increased sharing of data and collaboration between the human resources department and the affected production and maintenance groups can help address the issue in a more effective way.

The good news for mining companies is that because they have many engineers in their ranks, there’s no shortage of technical skills. But the challenge is that the more tangible ingredients, such as the technology itself, are only part of the solution, which is why some of the progress made by the industry so far has produced modest results. Truly achieving the potential of digital transformation means looking at some of the less tangible elements of the operations—namely culture, people and business processes—to change the organization in a systemic and sustainable way.

Agile ways of working are an important part of addressing those people, process and cultural elements. Mining companies have long used more traditional project management approaches involving separate and extended stages of concept, design, testing and implementation when it comes to transforming the business. But to get the most out of their digital investments, they would do better to focus on short bursts of activity by cross-functional teams that deliver incremental value regu-

A vision of transformation

Recently, PwC Canada highlighted some of the ways the mining industry is embracing transformation through our 2019 Art of mining program. We asked this year’s participants to submit a photo that answers the question: What does transformation look like to you? See the winning photos below and read about how they describe their transformation journeys.

Tugliq Energy and Raglan Mine, a Glencore Company

“Mining transformation is aiming towards a gradual increase in activities but with a noticeable decrease in its environmental impact. Tugliq Energy’s wind turbine has avoided the combustion of 10 million litres of diesel since 2014 in one of the most fragile ecosystems of our planet: the Canadian Arctic. Introducing renewable energy assets to mining activities opens up a whole new era of opportunities to avoid more greenhouse gas emissions. For us, mining transformation looks like this picture!”
larly. The approach creates momentum through early wins and helps to shift organizational culture as change becomes a constant.

What does it look like to address those softer, cultural elements? PwC has worked to visually highlight some of the ways mining companies are exploring transformation through our annual Art of mining program. This year’s images illustrate some of the elements of cultural changes that support a broader transformation, such as the focus by IDM Mining Ltd. (since acquired by Ascot Resources Ltd.) on the importance of passing information about operations and the business from one generation to the next.

The approach reflects the importance of solving challenges with cross-functional teams that include people from different levels and areas of the business to expressly drive sharing of information and experience.

In the case of Lundin Mining Corp., it featured a young woman exploring a drilling simulator. Such images demonstrate the potential for the industry to attract more young people and change mining culture not only by highlighting the ways companies are modernizing but also by showcasing the flexible and remote working opportunities new workers are likely to seek out that technology is now making available to them.

What does transformation look like to you?

IDM Mining Ltd.

“To pass the wisdom and experience of operating safely and efficiently to a new generation, in the challenging conditions we routinely face in mining. Pictured here is a mining veteran of more than 40 years, David Green of Stewart, B.C. He has trained underground miners, particularly Indigenous crews, from Greenland to Kyrgyzstan, but particularly in northwestern British Columbia for Procon Mining, the Northair Group and IDM Mining.”

Lundin Mining Corp.

“At our Swedish operation Zinkgruvan, a young girl explores her interest in mining at the controls of a drilling simulator. One of our social performance goals is to get young people, particularly young women, interested in science, technology, engineering and mathematics. With the adoption of new technology, like tele-remote operated equipment, we’re not just transforming the way we mine but cultivating the next generation of miners who will be leading this innovation in the future.”
It’s an interesting time for the mining industry. On the one hand, renewed deals activity has brought the industry into the spotlight after years of speculation about when the sector would start to see more momentum. After a period of internal restructuring, companies are looking outward for opportunities.

On the other hand, the overall growth outlook is uncertain. While forecasts suggest prices for commodities like gold and other metals will stabilize in the coming years, there are few signs of a significant upswing. As our recent CEO Survey found, business leaders have become notably less optimistic about the economy and their own prospects in the coming years, and CEOs in the industry sector that includes mining companies were largely in line with that view.

A recent report from the Mining Association of Canada noted some of the challenges the industry is facing. While it pointed to several actions governments can take to increase competitiveness, the industry faces a number of issues that will require companies to continue to look inward as well. Exploration and development will remain a significant challenge, particularly since junior mining companies will likely continue to find it difficult to attract investment. Royalty and streaming and private equity funding tends
to favour more advanced projects, while debt financing is often out of reach for many smaller mining companies.

For larger mining companies looking to shore up their positions and replenish their reserves, that puts an even greater focus on funding exploration and development themselves and on deal activities. While some companies may resist formal mergers, joint ventures are an alternative way of generating synergies and accessing the capital they need to position themselves for growth.

Cost controls will also continue to be a significant concern, and that, combined with the renewed deals activity, will put the spotlight on attracting and retaining talent in order to navigate the shifting environment. As our CEO Survey found, the availability of key skills was a top threat to growth identified by business leaders in the industry sector that includes mining. More than half of CEOs in the sector believe they can’t innovate effectively as a result of that skills gap.

For mining companies, 2019 will be a year of new opportunities. Recent merger activities are renewing prospects for growth and investment, but the challenge will be to harness the opportunities while avoiding the mistakes of the past. The mergers are also creating a big shift in the Canadian mining landscape, with some of the bigger players reducing their presence here as a result of the new combinations. For those that find the right merger opportunities, uncover the best formulas for executing them and then layer on agile ways of working and other aspects of holistic digital transformation, the opportunity is there to become the next great Canadian mining company.
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