Accessing Capital in Mining Today: Managing Through the Cycle

Monday, February 20th, 2017 2PM to 5PM: Room 210

2017 SME Annual Conference & Expo and CMA 119th National Western Mining Conference

Colorado Convention Center 700 14th Street, Denver, CO 80202 Sunday February 19th - Wednesday, February 22nd, 2017

A forum for more than 6,500 industry professionals, from across the world, to share innovative ideas, best practices and cutting-edge research in more than 100 sessions with an expansive marketplace of more than 800 exhibiting companies

Accessing Capital in Mining Today: Managing Through the Cycle

Join our experts who will speak about key issues and latest trends and answer your questions about raising capital in mining today. It is a challenging environment; as metals' prices go down and up, so do investors' and lenders' interest and valuations. If you are in the exploration and mining business, an investor or owner, you will want to hear our speakers discuss: What can you do to help raise capital? Is the capital available suitable? How do technical, non-technical, legal, and societal issues and risks impact raising capital? What should you know about debt, equity, or other sources of capital such as private equity, hedge funds, royalty, and streaming companies? If in distress, what can you do? Is M&A, consolidation and or restructuring the best option? Join us to hear our Speakers discuss these issues and latest trends, and get your questions answered.

Following are the biographies of the organizer and speakers, in the same order as the agenda.

2PM - Introduction by Panel Chair: Tim Alch, Executive Director of NY SME and Managing Partner of TAA Advisory, LLC

2:10PM Alain Halimi, Head, Metals & Mining, Americas at Commonwealth Bank of Australia - ***A banker's perspective of funding mining projects***

2:30PM Richard Lambert, P.E., P.Eng., Principal Mining Engineer, Executive Vice President and Chief Operating Officer, RPA - ***The role of the independent engineer in project finance***

2:50PM Ajay Kumar, Manager, KPMG LLP - ***Integrated business planning - An enabler for raising capital***

3:10PM Keith McGregor, Principal, Capital Transformation Practice, Ernst & Young LLP - ***From surviving to thriving: for driving success in tomorrow's mining sector***

3:30PM Cynthia Urda Kassis, Partner, Shearman & Sterling LLP - ***An attorney's view of key legal and financial issues mining and exploration companies should be mindful of when seeking to raise capital today***

3:50PM Robert Livermore CEM, Principal, Ramboll Environ - ***Non-technical considerations in the due diligence process of mining transactions***

4:10PM Mark Smith PE, Esq., President & CEO, Largo Resources - ***A mining executive's view of raising capital in mining today, including raising debt, equity, hybrids, and managing relations with investment bankers and shareholder communications***

4:30PM Richard Reeves, Managing Director, Northcott Capital - ***An independent advisor's view of raising capital mining ventures today***

2PM - Tim Alch, Executive Director of New York Section of SME and Managing Partner of TAA Advisory, LLC. Tim has many years of experience advising corporate, financial and government clients and analysis of strategy, management and performance of firms and investments in the global resource sectors and related industries. He is respected for his project management, collaborative team building and research and analysis of markets and challenges facing owners, management, investors and lenders at the project and corporate level. His career spans equities analysis and management and investment advisory of technical, financial, investment, strategic management issues working with leading firms and experts on many projects in the United States, Canada, South America, Europe, England, Australia and elsewhere. He is an honors graduate of Amherst College, B.A. Geology; and continued study in M.Sc. Mineral Economics (ABD) at Penn State. Tim is a member of Society of Mining, Metallurgy and Exploration (SME) and American Exploration and Mining Association (AEMA). Tim served as an executive committee member of New York Section of SME since 2008, Chair (2016) of the NY Section of SME and Co-Chair of SME's Current Trends in Mining Finance Conferences 2013-2016.

2:10PM - Alain Halimi, Head, Metals & Mining, Americas at Commonwealth Bank of Australia - *A banker's perspective of funding mining projects* - Mr. Halimi will discuss trends about funding of mining projects, key bankability issues when lending; impact of and importance of confidence levels of geologic, feasibility studies; the quality of deposits and arrangement between off-takers and miners; whether hedging is advisable; factors that influence the level of equity and debt in structuring a mining company; and how to figure unknowns in to financing structures.

Alain Halimi is Head, Metals & Mining, Americas, Director, Specialized Finance, Institutional Banking & Markets of Commonwealth Bank of Australia Alain leads Commonwealth Bank of Australia's (CBA) mining and metals debt platform for base, precious and specialty metals and bulk commodities in the Americas and EMEA. Alain has been a financier in natural resources, energy and infrastructure for 10+ years, originating secured and unsecured debt financing, project financing, acquisition financing, capital markets, mezzanine and holdco PIK financings and advising clients on a range of project financings, acquisitions and divestitures transactions. He has completed 100+ transactions with combined value of US$30+ billion in the Americas, EMEA and Asia Pacific. Earlier, Mr. Halimi was a VP at BNP Paribas New York in the Metals & Mining Structured Debt Group advising or arranging transactions for international mining and metals clients including origination, structuring, negotiation and closing of numerous limited and non-recourse project & structured financings, in the capacity of agent/underwriter.

2:30PM - Richard Lambert, P.E., P.Eng., Principal Mining Engineer, Executive Vice President and Chief Operating Officer, RPA - *The role of the independent engineer in project finance* – Mr. Lambert will cover the assessment of technical and economic risk and lender's tolerance for risk.

Richard Lambert, P.E., P.Eng., Principal Mining Engineer, is Executive Vice President and Chief Operating Officer of RPA. Rick has 35 years of international and domestic experience in mine operations and management, mine engineering, project evaluation, and financial analysis. He has been project manager and lead technical advisor for many mine financings, mergers, acquisitions, and privatizations. Mr. Lambert has extensive experience in mine cost estimating and is skilled in management from project start-up to production, maintenance, and mine planning. Rick has been involved in coal, industrial minerals, base metals, and precious metal mining projects around the world.

2:50PM - Ajay Kumar, Manager, KPMG LLP - *Integrated business planning - An enabler for raising capital -* Integrated Business Planning (IBP) helps achieve extended visibility, aligned planning and analytic capabilities to make proactive tradeoff decisions generating improvements across revenue, cost, assets, risk and predictability. IBP delivers cross-functional alignment of strategic, operational and financial processes to create value in asset-intensive industries. The author will share the operating model, organizational challenges, and best practices from a recent global mining client experience.

Ajay Kumar is an experienced advisory, operations, and finance consultant currently working with KPMG in their management consulting practice for energy and natural resources. He has corporate finance, strategy planning, operations excellence, and project management experience. His strengths include maximizing value for clients, strategic planning/modeling, process optimization, valuation, and analysis. He also has proven experience managing multiple stakeholders and engaging cross-functional teams in matrix global cultures. Additionally, Ajay is skilled at leading strategic initiatives in business and operational transformation and driving change management in the Mining industry.

He holds an MBA from the University of Virginia and a Master's degree of Engineering & Information Systems from the University of Utah. He is based in Denver.

3:10PM - Keith McGregor, Principal, Capital Transformation Practice, Ernst & Young LLP - ***From surviving to thriving: for driving success in tomorrow's mining sector***

Keith McGregor is a Principal in the Capital Transformation Practice, specializing in working with underperforming corporates to achieve strategic, operational and financial restructurings. He has over 25 years' experience in global restructurings across many industry sectors including Energy (Metals & Mining, Oil & gas and Power & Utilities), drawn from roles as adviser, banker and Chief Restructuring Officer in industry. Since the onset of the GCC, Keith has advised on restructurings with aggregate enterprise value of over $100bn.

3:30PM - Cynthia Urda Kassis, Partner, Shearman & Sterling LLP - ***An attorney's view of key legal and financial issues mining and exploration companies should be mindful of when seeking to raise capital today***

Cynthia is a senior partner in the Project Development & Finance practice of Shearman & Sterling. Her depth of experience includes representing sponsors, lenders and other investors in project, corporate and acquisition financings with respect to precious, base and specialty metal and energy mineral projects around the globe most notably in multiple countries in the United States and Latin America. Cynthia acted as Trustee-at-Large of the Rocky Mountain Mineral Law Foundation (RMMLF) from 2011-2014 and is a Member of the Steering Committee of RMMLF's 2017 Special Institute on International Mining and Oil & Gas Law, Development, and Investment conference. She is ranked as a leading project finance lawyer by Chambers Global, Chambers Latin America, Chambers USA, IFLR 1000, Legal 500, Guide to the World's Leading Lawyers in Project Finance and The International Who's Who of Project Finance Lawyers, of Banking Lawyers and of Mining Lawyers. She has also been named "Dealmaker of the Year" by The American Lawyer, "Projects/Energy Lawyer of the Year" by Chambers & Partners and "Project Finance Lawyer of the Year" by Who's Who Legal.

3:50PM - Robert Livermore, CEM, Principal Ramboll-Environ - ***Non-technical considerations in the due diligence process of mining transactions -*** "Due diligence" is the review of a facility or business to assess and quantify risks and operating status before an acquisition. Due diligence findings can be used to negotiate the price, general terms, and indemnification provisions in the purchase and sales agreement. In addition to assessing outstanding liabilities, necessary capital improvements, and the adequacy of operating budgets, due diligence should include "nontechnical" considerations, such as local community acceptance and relations, and the effect on the company's public image, operations and post-closure strategies. This paper will discuss how these considerations can be addressed in the due diligence process and factored into the transaction.

Due diligence is performed on business and facility acquisitions to verify the sellers' claims, usually before finalizing the purchase and sales agreement. Current due diligence practices have been expanded to include a number of the many other aspects inherent in the growing complexity of modern business. Because of the potentially significant costs now associated with environmental matters, environmental due diligence has become an integral part of most companies' due diligence efforts and is almost universally demanded by lenders and investors. Environmental due diligence, then, can be defined as a review or audit of a facility or a business unit that assesses and quantifies inherent risks and other intangible risks that may cause delays or project execution prior to and post-acquisition. Given today's changing regulatory and litigious atmosphere, environmental due diligence is a major factor for potential buyers of mines and mineral processing facilities. Environmental due diligence encompasses both technical and nontechnical aspects and, in today's society and business atmosphere, both are equally important. This paper will discuss the Non-technical aspects of the due diligence process and the relevance of understanding these risks and implication during and after a transaction.

Mr. Robert Livermore has over 30 years of experience in the geological and environmental consulting field and has conducted numerous subsurface soil exploration, environmental assessment, due diligence, compliance audits and contaminant remediation projects for the mining, oil & gas, manufacturing, and semiconductor sectors. He is a Certified Environmental Manager in Nevada and has his GIT in Arizona. He is a member of the National Groundwater Association, The Association of Engineering Geologists and is Vice Chairman of the SME Maricopa Division and Company representative for the National Mining Association. Mr. Livermore was in the mining exploration field for over two years and was project geologist on numerous gold projects in Nevada and New Mexico. In addition, Mr. Livermore directed compliance audits or capturing environmental legal obligations for facilities in North and South America. Mr. Livermore has been involved with RCRA and CERCLA sites in the Western US and has given litigation support and technical review on three RCRA petroleum regulatory issues and one CERCLA site in the State of Arizona. He is currently a Principal for Ramboll-Environ in Phoenix, Arizona but has overseen work in North America and globally for clients such as Honeywell, Alcoa, Teck, Freeport McMoRan, Hudbay, Newmont and others.

4:10PM - Mark A. Smith, PE, Esq. President and CEO, Largo Resources – *A mining executive's view of raising capital in mining today, including raising debt, equity, hybrids, and managing relations with investment bankers and shareholder communications*

Mark Smith P.E. is President and CEO of Largo Resources. Mark has 34 years of experience operating, developing and financing mining projects in the Americas and abroad. Mr. Smith also serves as Executive Chairman of NioCorp Developments Inc., developing the only niobium deposit in the USA and was rated the top performing mining company on the TSX Venture Exchange in 2014. He formerly served as President and CEO of Molycorp, Inc. from 2008 to 2013, during which time he developed the company into the largest rare earth company in the world, outside of China. Prior to Molycorp, Mr. Smith held various engineering, legal and executive positions for Chevron and Unocal.

4:30 PM - Richard Reeves, Managing Director, Northcott Capital - *An independent advisor's view of raising capital for mining ventures today*

What a difference a year can make! While precious metal prices still reflect the strong dollar, coal base and ferrous metals are showing life; are we starting to see the long-awaited bottom and upturn in the markets? We appear to have a more industry friendly stance in both the Executive and Legislative branches of the US government. Does this portend opportunities or is it transitory? Will equity and debt investors conclude improved prices and a more favorable regulatory environment is long term and invest more, or will they stay on the sidelines? While it is impossible to answer any of these questions definitively, this presentation will attempt to provide a framework in which to consider them as part of making a decision to develop new capacity and approach the markets for financing.

Rick Reeves is a Managing Director at Northcott Capital, providing independent financial advisory services to clients in the Americas. He has 21 years of experience in: marketing, structuring and executing mining finance transactions and advisory; valuation; and mine feasibility and mineral development projects. Previously, Mr. Reeves worked as an investment banker at MUFG, Deutsche Bank and Barclays BZW. He has led or played integral roles in many transactions, e.g.: privatizations of British Coal and Siderúrgica del Orinoco, project financings of the Antamina mine and expansion of Cerro Matoso, valuation of Carbones del Caribe in advance of its sale by Cementos del Caribe, Walter Energy's acquisition of Western Coal, and refinancing of the Esperanza mine. Mr. Reeves has a B.Sc. in Mining Engineering from the Colorado School of Mines and an MBA from the University of Chicago. He is a registered P.E. in Colorado, and holds Mine Manager/Foreman and Shotfirer certification in Colorado and Illinois.

5PM – Session Ends. Thank you!

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SME's 5th Annual Current Trends in Mining Finance (CTMF) Conference

Managing through the Cycle, Investing for the Future

Connecting Mining, Finance and Engineering Executives

Sunday April 30 - Wednesday May 3, 2017 – New York, New York

Register before March 31 at a discount to attend any of the CTMF events

Join us at 5th annual Current Trends in Mining Finance (CTMF) Conference. A great opportunity to meet with and get your questions answered by leading mining, finance, advisory and engineering executives and experts in New York's midtown financial district.

All are encouraged to register before March 31 at a discount.
The Registration Form is on the other side here. Space is limited.

Intended for senior executives and mining industry specialists, bankers, financial analysts, investors, portfolio managers, and engineers, the 2017 CTMF conference will bring experts together to discuss trends and a range of topics, solutions, risks and where opportunities are.

Present at the 2016 conference, dinner, workshops and receptions were officers from 35 mining companies and 200 bankers, investors, analysts, advisors, engineers, and government officials. About 60% of attendees travelled from outside New York, including from Argentina, Brazil, Canada, Chile, Mexico and Peru to Australia, Germany, Japan and the United Kingdom.

Details about the Agenda, Sunday dinner and four Workshops are in the CTMF website at http://community.smenet.org/currenttrendsinminingfinance/home?ssopc=1

Join these leading Sponsors: Shearman & Sterling LLP, Government of Quebec Newmont Mining Corporation, EnviroSuite, Dassault Systemes, SRK Consulting, Ernst & Young LLP, Hatch Ltd., CAM, Matamec Explorations, Nemaska Lithium, Abernathy MacGregor, Golder Associates, BDO USA LLP and others.

Any questions contact: Tim Alch, Conference Chair at timalch@gmail.com

SME NEW YORK SECTION

Mining Finance

SME's 5th Annual Current Trends in Mining Finance Conference

Managing through the Cycle, Investing for the Future

Connecting Mining, Finance and Engineering Executives

Shearman & Sterling, LLP, 599 Lexington Avenue at corner of 53rd Street, New York, New York

Sunday, April 30th – Wednesday, May 3rd, 2017

Visit this link to register to attend and program tab for updates.
Revisit the CTMF website for updates about the 2017 Agenda, the Sunday dinner and 4 workshops.

Check your registration and payment option. Send completed form and payment as soon as possible. Space is limited.

☐ **MAIL** Send form and payment as soon as possible. Space is limited.
Alan Oshiki, Treasurer NY Section of SME
c/o Abernathy MacGregor
277 Park Avenue, 39th Floor, New York, New York 10172
(212) 371-5999

☐ **ONLINE** Register online at the Conference website where details are and updates will be posted.
http://community.smenet.org/currenttrendsinminingfinance/home
and or at the New York Section of SME website at: **www.smeny.org**

☐ **EMAIL** **AHO@ABMAC.COM**

REGISTRANT INFORMATION

NAME: ________ *TITLE:* ________

EMPLOYER: ________

ADDRESS: ________

CITY: ________ *STATE:* ________ *ZIP:* ________ *COUNTRY:* ________

EMPLOYER'S PHONE: ________ *FAX:* ________

E-MAIL: ________ *SME MEMBER NUMBER:* ________

REGISTRATION FEES

Includes Monday and Tuesday breakfast, lunch and receptions

	Prior to 3/31/17	After 3/31/17	TOTAL FEES
Delegate	$550	$600	$ ________
Speaker	$225	$250	$ ________
Workshops	$295	$350	$ ________

GLOBAL BATTERY RAW MATERIALS SUPPLY CHAIN AND ENERGY STORAGE: THE 21ST CENTURY'S NEW OIL
by Benchmark Mineral Intelligence on Sunday, April 30th from Noon to 4:30 pm at Opia Restaurant — $ ________

RELIABILITY OF MINERAL RESOURCE ESTIMATES FOR EXPLORATION AND DEVELOPMENT OF A MINING PROJECT: WHAT A BANKER, FINANCE EXPERT AND ANALYST SHOULD KNOW
by GeoGlobal, LLC with AMEC Foster Wheeler on Sunday, April 30th from Noon to 4:30 pm at Opia Restaurant — $ ________

WHERE DO THINGS GO WRONG IN MINING PROJECT DEVELOPMENT? RED FLAGS TO WATCH OUT FOR AND MITIGANTS
by Roscoe Postle Associates and Shearman & Sterling LLP on Wednesday, May 3rd from 8 am to 11:45 am at Shearman & Sterling LLP — $ ________

UNDERSTANDING THE IMPORTANCE OF USING HEDGING IN A VOLATILE PRICE ENVIRONMENT: BY MINERS AND DEVELOPERS OF RESOURCE PROJECTS
by Noah's Rule on Wednesday, May 3rd from 8 am to 11:45 am at Shearman & Sterling LLP — $ ________

DINNER Sunday, April 30th at Opia Restaurant **$65** — $ ________

SOCIAL FUNCTIONS
Attending Monday Luncheon ☐ Yes ☐ No
Attending Tuesday Luncheon ☐ Yes ☐ No

GRAND TOTAL $ ________

☐ Check for special needs. Please specify: ________

PAYMENT

☐ **AMEX** ☐ **DISCOVER** ☐ **MASTERCARD** ☐ **VISA** ☐ **CHECK/MONEY ORDER ENCLOSED**

CARD NUMBER: ________ *EXPIRATION DATE:* ________ *CCV CODE:* ________

SIGNATURE: ________

PLEASE NOTE: NO REFUNDS AFTER MARCH 31, 2017. *All attendees must register. A $30 processing fee will be assessed on substitutions.*

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If you have questions contact
timalch@gmail.com

Institutional Banking
& Markets

2017 SME Annual Conference and Expo and CMA 119th National Western Mining Conference

Accessing Capital in Mining Today
A Banker's Perspective of Funding Mining Projects

Alain Halimi – Head of Mining & Metals, Americas

February 2017

CommonwealthBank
of Australia

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Section A

Commonwealth Bank Mining Finance Platform

Commonwealth Bank of Australia

Australia's largest bank and leading financier to the natural resources industry globally.

- Commonwealth Bank of Australia is Australia's largest financial institution and largest company by market capitalization
- We are a leading provider of capital solutions to our institutional, business and retail clients globally
- Our financial services span Banking, Funds Management, Global Markets, Equity Brokerage and Insurance
- Dedicated Natural Resources industry group with offices in New York, Australia, London, Houston and Asia
- This team is supported by in-house engineers, specialist credit risk professionals, and broad product specialists
- We deliver innovative capital and risk management solutions across the Metals & Mining, Oil & Gas, Commodity Traders and Services sectors

Credit Rating	AA- (S&P) Aa2 (Moody's)
Market Cap	**A$142 bn** (US$107 bn) (17 January 2017)
Total Assets	**A$933 billion** (US$700 bn) (30 June 2016)
Funds Under Mgmt	**A$143 billion** US$107 bn) (30 June 2016)
Cash NPAT	**A$9.5 billion** (US$7.1 bn) (30 June 2016)

CBA global supporter of the mining industry across the spectrum

Commonwealth Bank delivers innovative and efficient capital solutions	
Debt	▪ Corporate and project debt, including borrowing base / reserve based facilities. ▪ Acquisition finance and bridging loan facilities, environmental bonding and guarantees.
Equity *	▪ Equity and Equity Hybrid underwriting and placement. ▪ Access to Colonial First State Global Asset Management including its highly regarded Global Resources Fund which holds in excess of A$4bn in resources equities globally.
Structured Asset Finance	▪ Equipment finance, commercial hire purchase, capital, operating leasing, tax account borrowing structures, on and off-balance sheet.
Trade Finance	▪ Cost effective working capital and trade finance options with appropriate risk mitigation techniques in support of cross-border trading.
Risk Management	▪ Global markets risk management products and structures which are tailored to manage specific commodity. Foreign exchange and interest rate exposures.
Transactional Banking *	▪ Full service transactional banking including deposits and employee banking packages. ▪ Fully supported by an integrated secure internet based portal.
Research	▪ Market analysis and in-depth research across interest rate, foreign exchange, fixed income, commodities and equities.
Advisory and Equity Solutions *	▪ Independent advisory solutions including consortium formation, sponsorship, participation and management for tenders, privatisations or corporate assignments across a broad spectrum of industries. Arranging and procuring debt and equity funding for projects.

* Predominantly in the Australian and New Zealand markets and for inbound investment.

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Section B

Market Environment

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Mining & Metals
Americas Market

Back to the Future

Mining gets back to the old normal

China is Changing

- China's emergence reshaped the industry
- Shifting internally from investment to demand-led
- Slower and / or different China demand pattern is impacting industry

Commodity Oversupply

- Large capital deployed (> US$1 trillion) over the past decade
- Many commodities in over supply

Miners are Rationalizing

- Industry inflation squeezed returns of marginal producers
- Industry focused on maximizing returns through productivity and cost reduction
- Seniors are refocusing on core assets – divesting
- Juniors are trying to survive - amalgamation

Capital Markets Appetite

- Equity market remain open for few names – +US$1.5 billion equity raised over the LTM
- Debt markets widely open: +US$10bn debt deals, +10 streaming / royalty deals etc.
- Ever competing debt market: Bank debt / DCM / PEs / Streaming & Royalty

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Section C

Bankability and Project Funding Considerations

Project Development and Bankability Considerations

Cost of Capital

−

+

DEBT

EQUITY

Certainty

Optionality

Production

Construction

Final Engineering & Permits Obtention

Project Evaluation: Feasibility Study

Economics Studies:
Scoping study, PEA, PFS

Ressources Evaluation:
NI 43101, JORC, SAMREC, CIM Guidelines etc.

Exploration

Project Development – Key Risks Considerations for Debt Financing

	Risks	Mitigates
Resources & Reserves Risks	▪ Ore body well defined and understood, sound drilling campaign, audited reserves reports, processing technology etc	▪ Extensive lenders technical due diligence, sound reserves definition, reasonable level of proven reserves, conservative debt sizing sponsor completion support etc
Completion Risk	▪ Complexity of the deposit, plant / processing equipment, contractual arrangements (EPC vs. EPCM), capital estimate & built-in contingency, overrun risk, additional capital funding risk etc	▪ Experienced management, completeness of technical studies, experienced construction manager, lenders technical due diligence, conservative capital structure, completion support / sponsor recourse etc
Performance Risk	▪ Proper grade reconciliation work, reasonable grade control practice, sound processing technology etc	▪ Thorough technical due diligence, well understood deposit, conservative debt sizing / financial structured etc
Commodity Price Risk	▪ Commodity price volatility, impact on construction cost and on earnings during operation etc	▪ Maximize fixed price contracts strategy during construction, fixed / floor price mechanisms, hedging portion of capex and opex etc
Environmental & Social Risk	▪ Compliance with local laws, EP requirements / social license to operate, reputational risk etc	▪ Lenders due diligence, independent confirmation of EP compliance etc
Jurisdiction Risk	▪ Expropriation, nationalization, license revocation, tax measures etc	▪ Management relationship with authorities, involvement of multilateral entities (IFC, ECAs), PRI, financial structure with offshore accounts etc

Debt financing solutions depend on asset & corporate life cycle

	1 Exploration & Development	2 Production	3 Production & Growth
Type of business	▪ Greenfield project	▪ Single asset	▪ Corporate (multiple assets)
Business need	▪ Funds needed for construction ▪ Long tenor of 5-15 years ▪ Financial flexibility ▪ Political risk sharing	▪ Sustaining capex, expansion and/or working capital ▪ Financial flexibility	▪ Acquisitions and / or organic growth ▪ General purposes
Key Considerations	▪ Project quality (e.g. reserves, costs, technology) ▪ Project cost, construction and completion risks ▪ Sponsor and key contract party strength ▪ Jurisdiction of operation and country risk ▪ Environmental and social issues / Equator Principles	▪ Project quality (e.g. reserve base, efficiency) ▪ Competitiveness ▪ Jurisdiction ▪ Market outlook for commodity	▪ Overall competitive position ▪ Leverage ▪ Diversity of assets, commodities, countries ▪ Cash flow generating capabilities

Historically miners have been financed with corporate and / or project debt

	Corporate Bank Facility	Cost Overrun Facility	Pre-Export Finance Facility	Project Finance Facility
Description	▪ Revolving lies used for general corporate purposes ▪ Sub IG secured by all assets with standard carve-outs	▪ Depending of borrower credit and asset quality ▪ Limited recourse basis ▪ Typically used for construction cost overruns or delays	▪ Secured by assignment of export contracts ▪ Limited recourse basis ▪ Typically for short- term financing needs	▪ Secured by project assets only ▪ Limited recourse basis ▪ Typically used for greenfield projects or joint ventures
Pro's and Con's	✓ Additional liquidity support ✓ Light coverage package ✓ Very liquid market × Lenders would want a pledge on most assets and negative pledge on assets	✓ As last money in relatively more efficient execution compared to traditional project debt facility. × Smaller debt amount generally sized to accommodate any cost slippage ("unknown-unknown") × Provision of cost-to-complete etc	✓ Provides liquidity before the commodity is exported ✓ Optimize leverage and provide liquidity support before exporting the commodity × Requires an off taker locked in for the entire duration of the transaction × Shorter tenors	✓ Highly structured/ tailor-made facility ✓ Highly flexible structure ✓ Relatively cheap source of financing compared to any other funding sources × Tightest structure with more covenants × Due diligence process

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Section D

Funding Sources Landscape in Today's World

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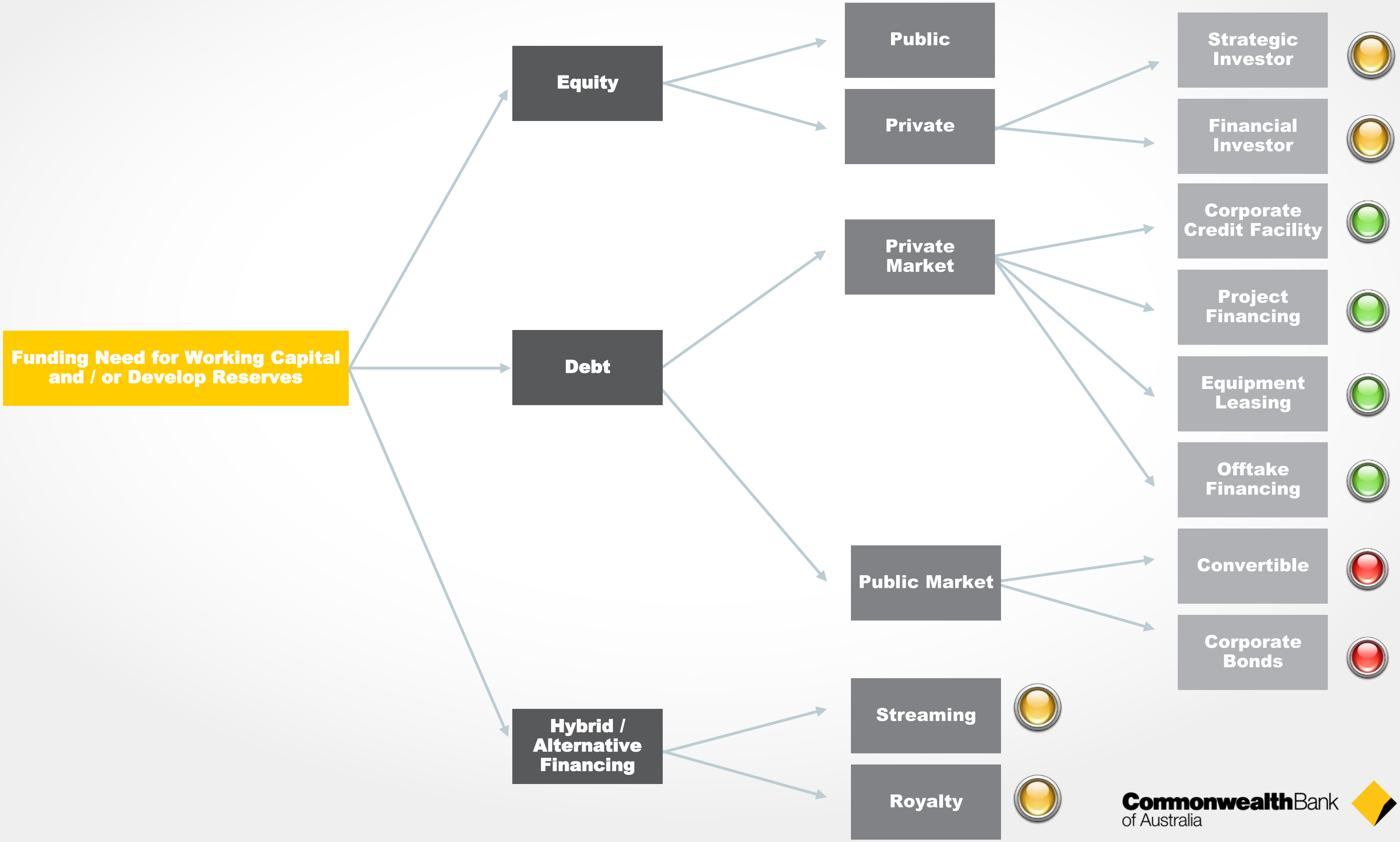
Available Financing Options for Mining Companies / Projects



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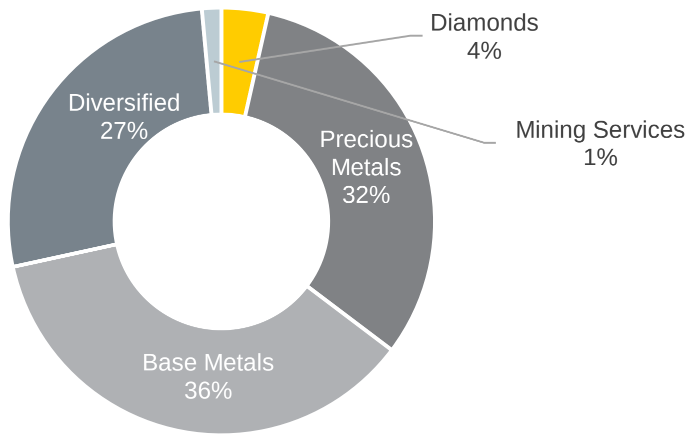
Funding Sources Options – LTM Overview & Use of Proceeds

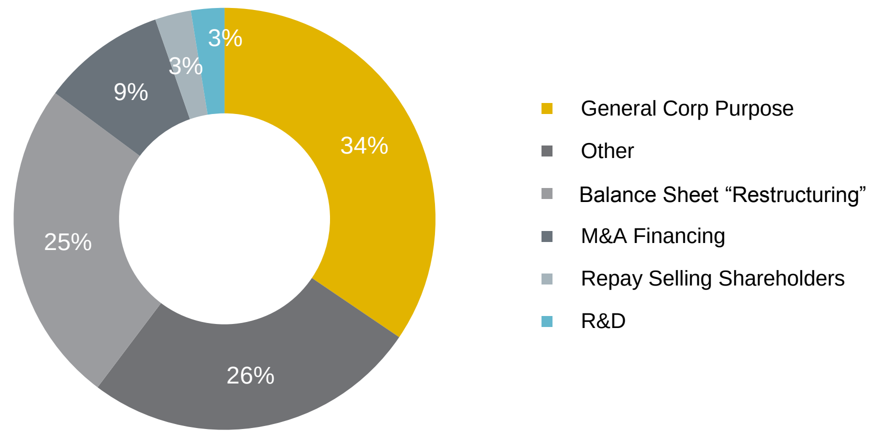
Public and Private Equity Markets

Equity Issuance – Sector Split



Source: Bloomberg, CBA, Company Data

LTM Equity Issuance – Use of Proceeds



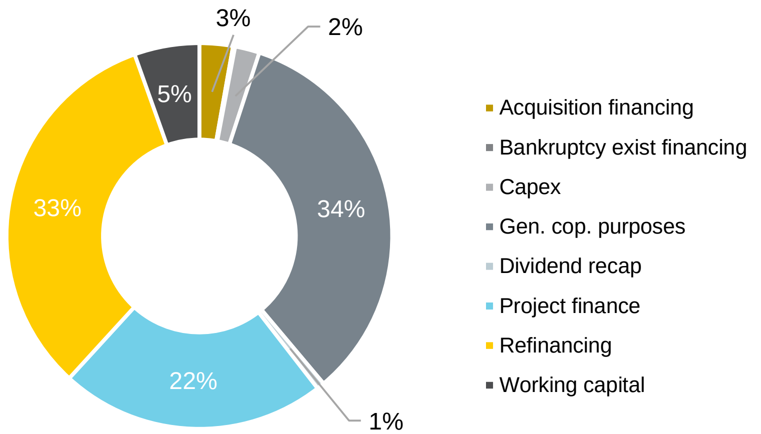
Source: Bloomberg, CBA, Company Data

- **Private Equity**
  - More activity from the specialised funds dominates the space in terms of private capital to miners.
  - Generally more committed than public investors. Likely to add value to the company.
  - Red Kite – Nevada Copper US$200m.
  - Blackstone – Pretium US$540m etc.
- **Pension / Sovereign Funds**
  - Strategic investors range from corporates looking for supply security to state-backed enterprises (sovereign wealth funds etc.). Over the past decade strategic corporate investment has mainly come from Asia.
  - Desired source of liquidity as they usually take minority hence shareholders maintains full control.
  - CDPQ – Osisko US$225m.
  - Mudabala – Aguas Teniadas mine etc.

Funding Sources Options – LTM Overview & Use of Proceeds

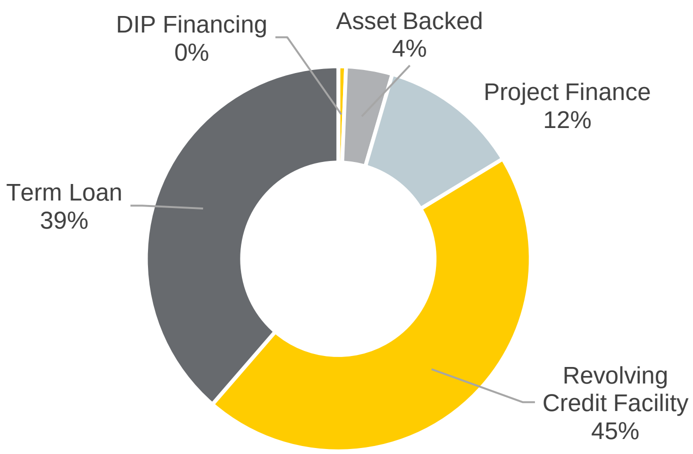
Debt Markets and Alternative Financings

Use of proceeds over LTM



- **Bank Markets**
  - Project Financing, RCF / Term Loan and Offtake financing widely open for good credit.
  - Attractive terms achieved for best project, in the right location and proper sponsorship.
  - Ability to generate free cash flow generation (FCF) remains key focus.
- **High Yield Market** Year to date… 2 issuances
  - Past issuers are looking to unwind and take advantage of competitive terms from bank market.
  - HY pricing put additional pressure on miners FCF generation
  - Miners are looking to redeem (when possible) or tender such notes in order to minimize financing cost / improve FCF as well as mitigate potential refinancing risk…
  - Some sizable refinancing are around the corner with no clarity on whether the HY market could re-absorb them.

Debt instruments used over the LTM



- **Alternative Financing**
  - Streaming/Royalty Finance – most prevalent alternative finance.
  - Streaming / royalty being used given lack of appetite from the equity market.
  - Active in the industry but highly selective with capital deployed to majors / high quality projects.
  - Juniors and/or construction risks are no longer the focus. Existing producers (especially seniors) are looking to monetize future production.
  - Confusion regarding nature: Debt versus equity.
  - Intercreditor arrangements, how it fits within the capital structure remain TBD, impact on debt capacity.

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Part E:

Conclusion

THANK YOU

Contact Me

Alain Halimi

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The Role of the Independent Engineer in Project Finance

Accessing Capital in Mining Today: Managing Through the Cycle

Presented by: Richard J. Lambert, MBA, P.E., P.Eng.

February 20, 2017

About RPA

- Advice to the mining industry for 30 years
- *The specialty firm of choice for resource and reserve work*
- All stages:
  - exploration and resource evaluation
  - scoping, prefeasibility and feasibility studies
  - financing, permitting, construction, operation, closure and rehabilitation.
- Clients are financial institutions, governments, major mining companies, exploration and development firms, law firms, individual investors, and private equity ventures
- Offices in Canada, United States and United Kingdom
- Head office in Toronto
- 100% employee owned

Outline

- Definitions
- Mine Finance Options
- Role of Independent Engineer in Project Finance
- Scope of Work
- Mining Project Risks & Mitigations
- Completion Tests
- Common Mistakes

Definitions

- Independent Engineer (IE) - Independent third-party engineers and geologists that provides technical assistance to the lenders.
- Independence – A test to show that the IE is not conflicted. An IE should not be reviewing its own work.

Mining Project Financing Options

- New mining projects are typically funded through capital financing
  - Retain cash on hand
  - Larger companies have more options
- Common types of capital financing include **bank debt, private investors debt or equity, equity financing or business bonds**.
- Our focus today is primarily on debt financing
- **Equity Financing** helps companies maintain a strong balance sheet by **avoiding debt**.
- Equity financing is often required even with debt financing.
- Typical ratios for loan financings are 50-70% debt to equity.

Mining Project Financing Options

- **Business Bonds** may be issued by companies to raise capital.
- **Bank Loans** are usually the most popular form of capital financing.
- **Private/Equity Investors** or venture capitalist may be used to fund capital projects,
  - Some private investors require an ownership stake, board positions, offtake agreements or managerial influence.

IE's Involvement in Mining Project Financing

- Private Equity Investors – IE does due diligence reviews for the private equity investors to support their investment/debt in a project. Some, private equity investors also negotiate an off-take agreement.

- Bank Debt – IE provides due diligence reviews for bank loans and investments.

Project Financing and IE’s Role

- In broad terms, the IE provides consulting due diligence services to the lenders of mining projects and it is usually performed in three phases:
  - Phase I: Initial project review and technical due diligence prior to financial closing.
  - Phase II: Construction and performance test monitoring. Completion Testing.
  - Phase III: Operations monitoring during commercial operation and after financial closing, typically for the life-of-loan.

- Not all projects get past Phase 1

Scope and Reporting

- Phase 1 – Due Diligence Report
- Phase 2 – Construction Monitoring reports after each site visit
- Phase 2 – Operational Monitoring reports after each site visit prior to Completion
- Phase 2 – Completion Test report after completion testing period
- Phase 3 – Continued Operational Monitoring Reports after each site visit and review of annual budgets and production performance.

Project Finance- Risks

Risk	Mitigation
Construction Risk	Overrun funding by parent. Make provisions and run sensitivities for schedule delays.
Completion Risk	Contractual guarantees from manufacturer, selecting vendors of repute, completion and/or performance tests.
Price Risk	Hedging
Resource Risk	Keeping adequate cushion in assessment, "reserve tail"
Operating Risk	Production tests, sensitivities, insurance.
Environmental Risk	Bonding and insurance
Technology Risk	Expert evaluation (IE) and retention accounts. Reserve accounts to insure proper funding

Project Finance – Risks

Risk	Mitigation
Political and Sovereign Risk	• Externalizing the project company by forming it abroad or using external law or jurisdiction • External accounts for proceeds • Political risk insurance (Expensive) • Export Credit Guarantees • Contractual sharing of political risk between lenders and external project sponsors • Government or regulatory undertaking to cover policies on taxes, royalties, prices, monopolies, etc. • External guarantees or quasi guarantees (IFC)
Interest Rate Risk	Swaps and Hedging
Insolvency Risk	Credit Strength of Sponsor, Competence of management, good corporate governance
Currency Risk	Hedging

Completion Testing

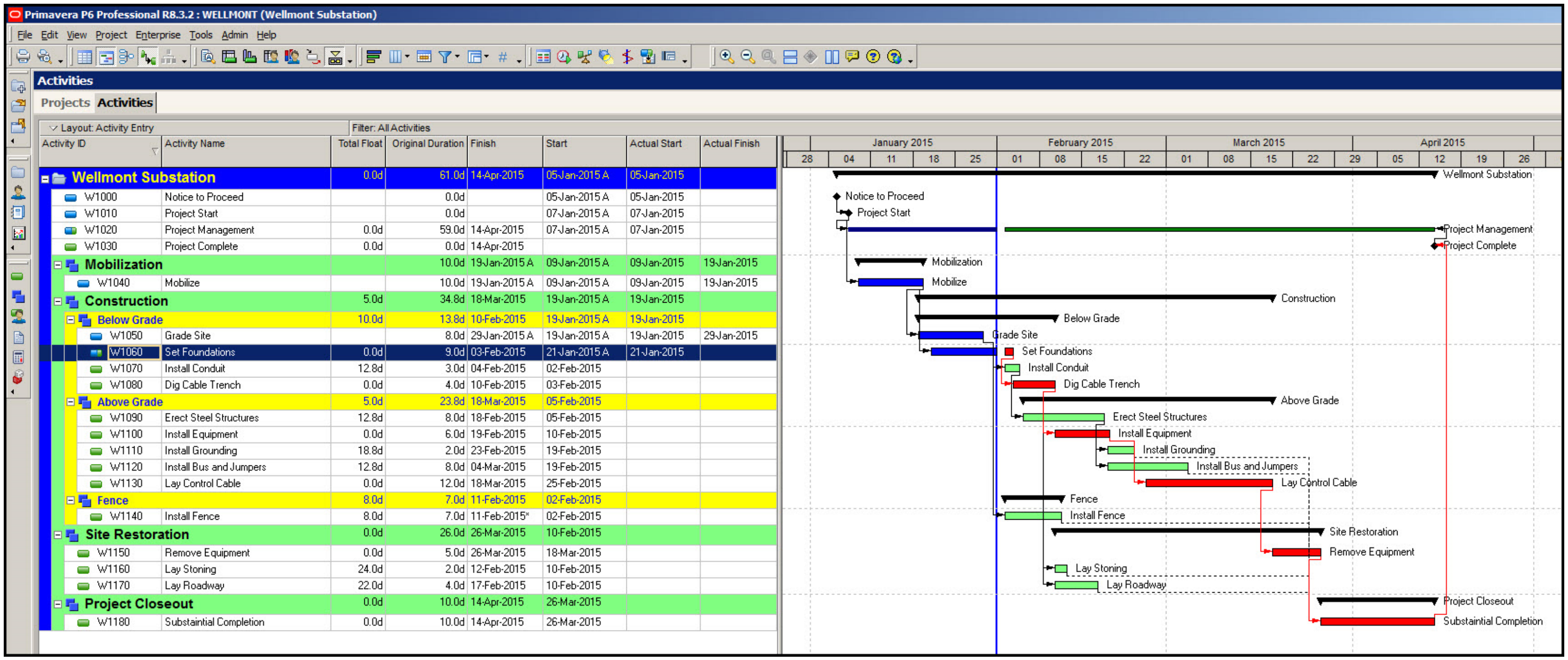
- A series of tests to validate the performance assumption in the cash flow model
- These tests include:
  - Physical Facilities and Critical Spares – Were the facilities built as described in the initial capital estimate and cash flow?
  - Production - Nominally there is a test for 90% of production over a 90-day period and a second test for 100% of production over a 30-day period.
    - Includes test of mine tonnage, grade, and reconciliation with the geologic model.
    - Includes test of process plant (and concentrate) tonnage, grade, and recovery..
    - May include test of the mineral reserves – a “reserve tail” test. Usually lenders like to see at least 35% of the mineral reserves remain after the loan is repaid.
  - Cost or Efficiency – test includes all mine site costs and either costs or consumables (fewer problems with potential escalation); may be expressed as C1 or AISC values.
  - Marketing – Tests the borrowers product to make sure it is saleable and acceptable to the purchasers. Usually requires shipping and invoice.

What are Common Mistakes

- Schedule Delay
- Ramp-Up Delay
- Capital Costs Overrun
- Mine Grade
- Productivity
- Metallurgy
- Level of Study

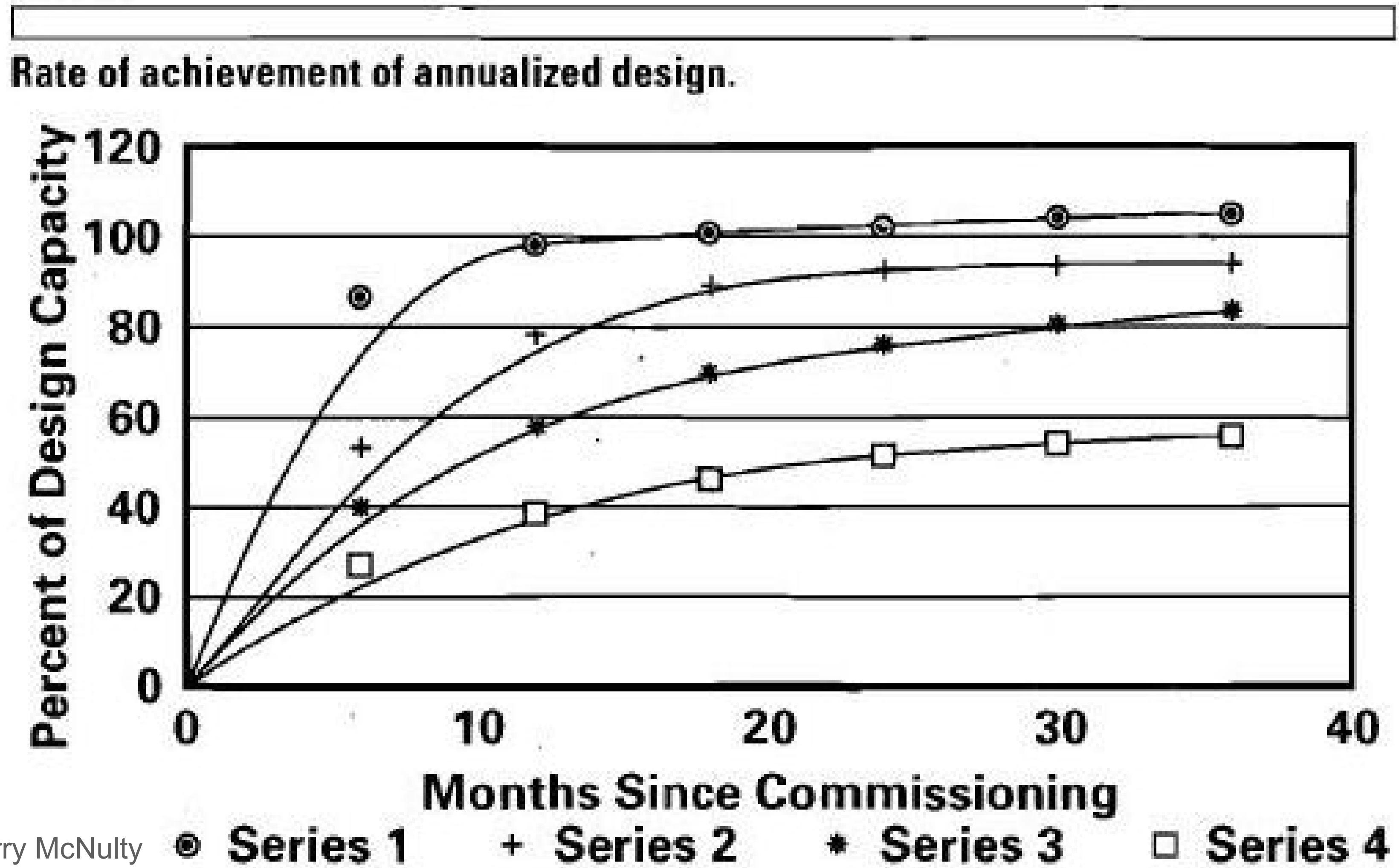
Schedule Delay

- The primary purpose of the schedule developed by the EPCM firm is to provide a target for project completion.
- The Master Schedule typically excludes any contingency.



Activity ID	Activity Name	Total Float	Original Duration	Finish	Start	Actual Start	Actual Finish
Wellmont Substation		0.0d	61.0d	14-Apr-2015	05-Jan-2015 A	05-Jan-2015	
W1000	Notice to Proceed		0.0d		05-Jan-2015 A	05-Jan-2015	
W1010	Project Start		0.0d		07-Jan-2015 A	07-Jan-2015	
W1020	Project Management	0.0d	59.0d	14-Apr-2015	07-Jan-2015 A	07-Jan-2015	
W1030	Project Complete	0.0d	0.0d	14-Apr-2015			
Mobilization			10.0d	19-Jan-2015 A	09-Jan-2015 A	09-Jan-2015	19-Jan-2015
W1040	Mobilize		10.0d	19-Jan-2015 A	09-Jan-2015 A	09-Jan-2015	19-Jan-2015
Construction		5.0d	34.8d	18-Mar-2015	19-Jan-2015 A	19-Jan-2015	
Below Grade		10.0d	13.8d	10-Feb-2015	19-Jan-2015 A	19-Jan-2015	
W1050	Grade Site		8.0d	29-Jan-2015 A	19-Jan-2015 A	19-Jan-2015	29-Jan-2015
W1060	Set Foundations	0.0d	9.0d	03-Feb-2015	21-Jan-2015 A	21-Jan-2015	
W1070	Install Conduit	12.8d	3.0d	04-Feb-2015	02-Feb-2015		
W1080	Dig Cable Trench	0.0d	4.0d	10-Feb-2015	03-Feb-2015		
Above Grade		5.0d	23.8d	18-Mar-2015	05-Feb-2015		
W1090	Erect Steel Structures	12.8d	8.0d	18-Feb-2015	05-Feb-2015		
W1100	Install Equipment	0.0d	6.0d	19-Feb-2015	10-Feb-2015		
W1110	Install Grounding	18.8d	2.0d	23-Feb-2015	19-Feb-2015		
W1120	Install Bus and Jumpers	12.8d	8.0d	04-Mar-2015	19-Feb-2015		
W1130	Lay Control Cable	0.0d	12.0d	18-Mar-2015	25-Feb-2015		
Fence		8.0d	7.0d	11-Feb-2015	02-Feb-2015		
W1140	Install Fence	8.0d	7.0d	11-Feb-2015*	02-Feb-2015		
Site Restoration		0.0d	26.0d	26-Mar-2015	10-Feb-2015		
W1150	Remove Equipment	0.0d	5.0d	26-Mar-2015	18-Mar-2015		
W1160	Lay Stoning	24.0d	2.0d	12-Feb-2015	10-Feb-2015		
W1170	Lay Roadway	22.0d	4.0d	17-Feb-2015	10-Feb-2015		
Project Closeout		0.0d	10.0d	14-Apr-2015	26-Mar-2015		
W1180	Substaintial Completion	0.0d	10.0d	14-Apr-2015	26-Mar-2015		

Ramp-Up



From: Terry McNulty

Mining Engineering Oct 1998

Capital Cost Overruns

- Of five operations in production, project total cost escalation of 11% to 186% with annual rises at long lead time projects typically in the 20-40% bracket (Brook Hunt 2008).
- Of seven mines in construction, total cost escalation from 52-157% with annual rises again typically in the 20-40% bracket. (Brook Hunt 2008)
- In a study of Feasibility Study performance since 1980 of 60 Western Hemisphere projects the average overrun was 22%. (Gypton 2002)
- Bullock suggests average overrun is 26% (Mining Engineering April 2011)
- No difference between internal and external
- No difference between majors and juniors
- No difference in location

Mine Grade

- Geology – does the block model reflect reality?
- Database integrity – QA/QC
- SG or Density
- Cut-off grades and price assumptions
- Capping
- Dilution
- Grade smearing
- Reconciliation

Productivity

- Number of workplaces = flexibility
- Lay out entire mine at the start, including all development
- Schedule in detail – monthly, quarterly, annually, life of mine
- Sinking Rate
  - Underground – 50 metres vertical per year
  - Open pit – 8 to 12 benches per year
- Benchmarking

Metallurgy

- Enough testwork to establish metal recoveries throughout the orebody
  - Bench scale
  - Locked cycle tests
  - Grinding tests
  - Pilot Plant
  - Leach tests
  - Column tests
  - Test heap
- Concentrate quality and impurities
  - Metal content too low
  - Sulfur content too low
  - Penalties for Pb, Zn, As, Sb, F, Cl, Hg, Bi, Cd, Se, etc.

Level of Study

- Levels of studies will have general range of accuracy.
- We get to accuracy through more and more engineering design and the use of detailed, current quotations for the estimate.
- The problem for many exploration and developing companies is that there is a cost to gaining estimate accuracy and a cost estimate has a shelf life.
- Unless there is a scope change, project cost estimates rarely get lower with more detail.
- Problems with projects advancing based on good results from Scoping Study.
- No feasibility study.
- Advance purchasing of equipment before study is complete.

Permitting

- Project advances before permitting complete.
- Permitting conditions affect project layout.
- Inability to mine certain areas.
- Higher closure costs

Summary

- Objective:
  - Provide background on project financing options
  - Describe role of IE and scope of work
  - Describe project risks and mitigations
  - Show where some mining projects make mistakes
- Outcome
  - Understanding mining risks and mitigations
  - Knowing when to engage an IE
  - Avoid losing money

RPA

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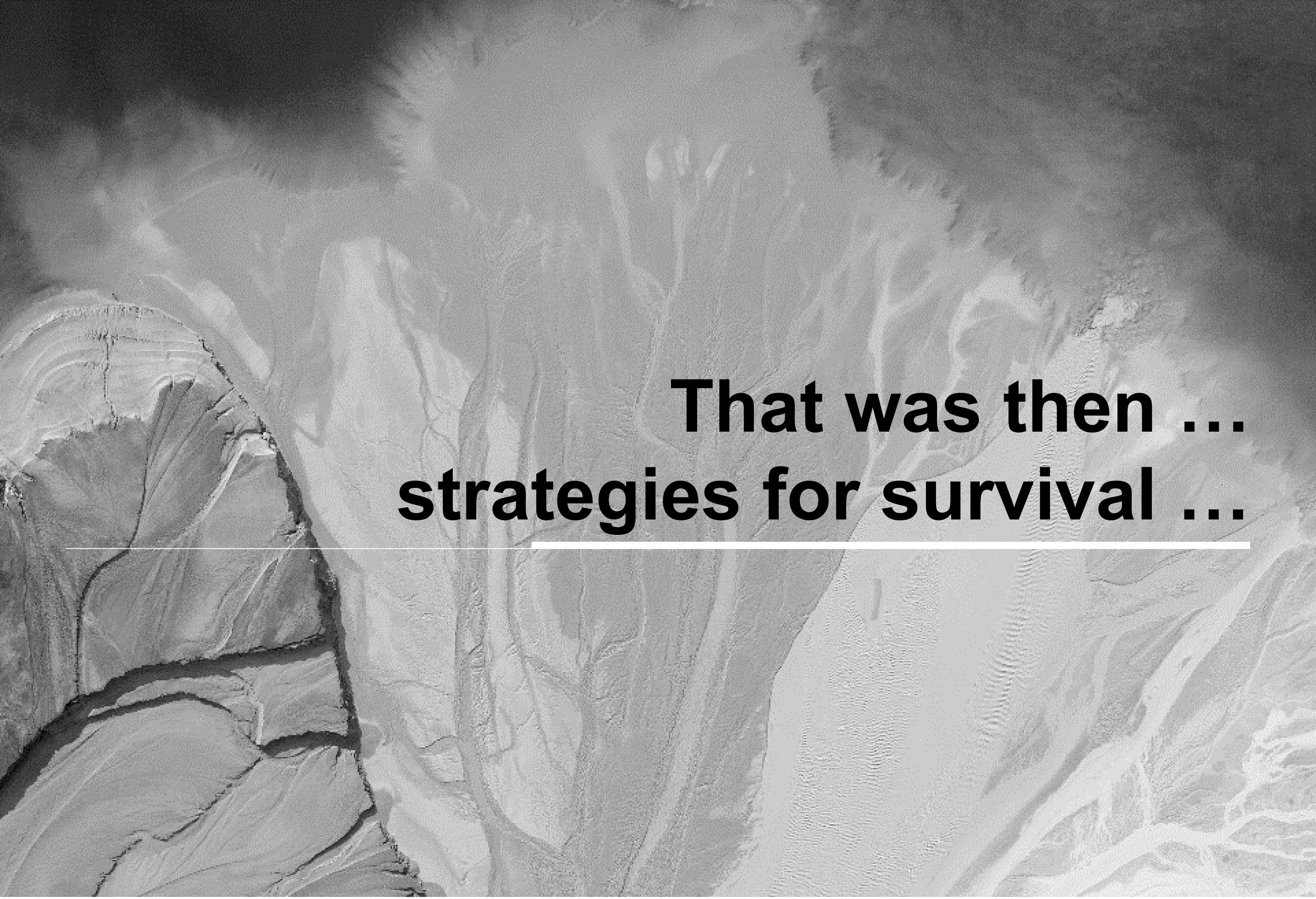
Vancouver Quebec City

From surviving to thriving: strategies for driving success in tomorrow's mining sector

Keith McGregor,
Principal, Capital Transformation

EY
Building a better working world

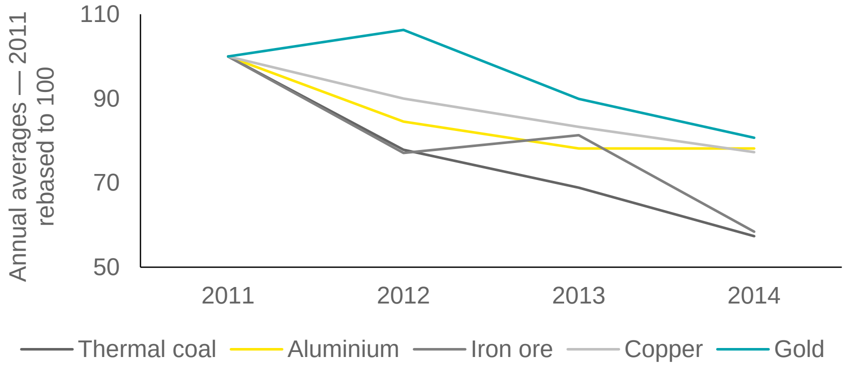


That was then …
strategies for survival …

A number of contributing factors are creating stress across the sector

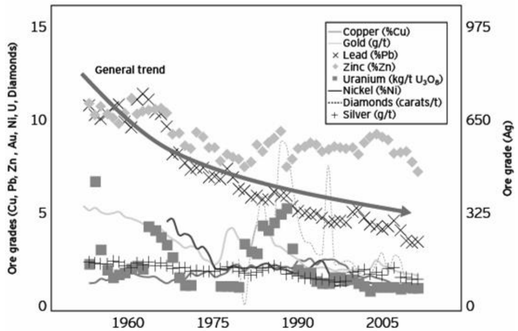
The key drivers of financial stress within the sector are:

Falling commodity prices



Source: Barclays Bank research report

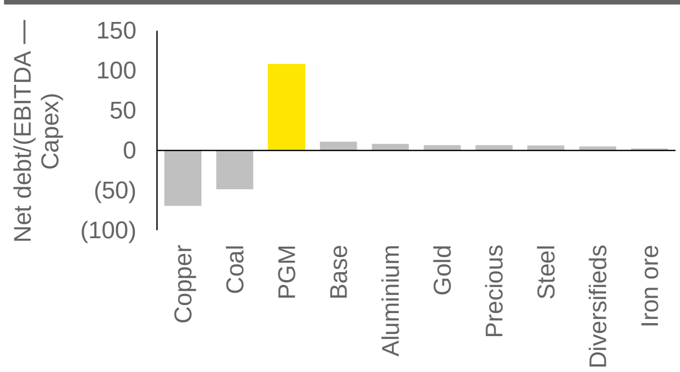
A decline in grades



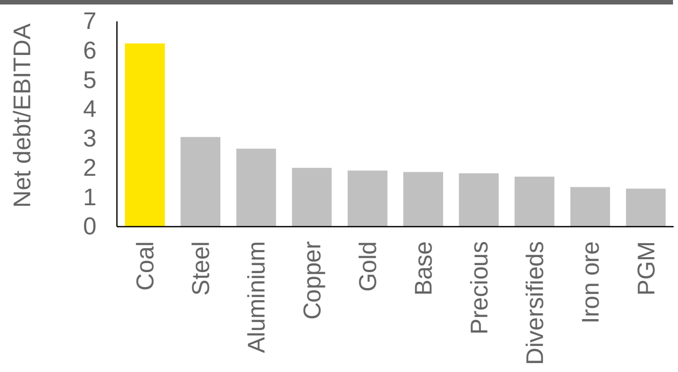
Source: "The Sustainability of Mining in Australia," Department of Civil Engineering, Monash University and the Mineral Policy Institute, April 2009, http://users.monash.edu.au/~gmudd/sustymining.html accessed 23 September 2014.

- A decline in average grades across the commodities is expected to continue, resulting in an increase in cash costs per unit and increasing pressure on margin.

Many industry players are highly leveraged



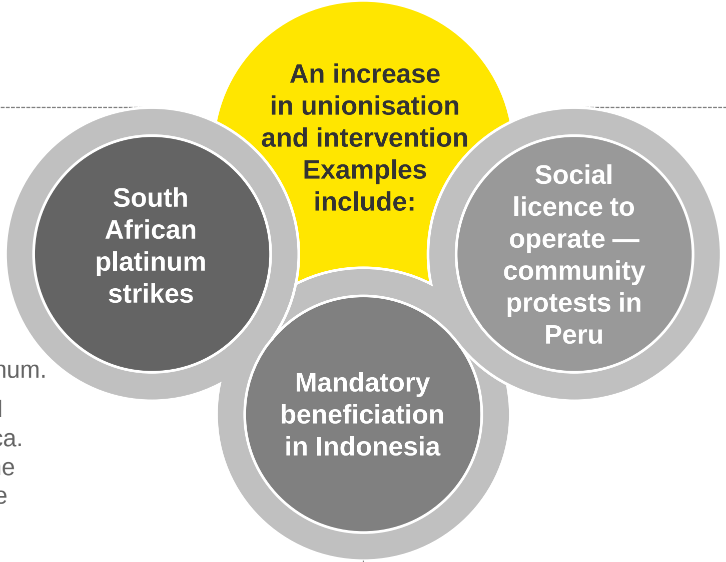
- Coal companies are on average the most leveraged, as falling cash flows over a sustained period have made them heavily reliant on debt.
- High levels of expansionary capex means many copper companies are generating negative free cash flow. However, their debt is supported by relatively strong earnings.



Source: Data on selected companies from CapIQ

A number of contributing factors are creating stress across the sector (continued)

Regulatory and social challenges (e.g., unionisation and intervention) raise volatility levels across the sector and create sub-sectors of even greater stress for certain participants.



A five month strike organised by South Africa's Association of Mineworkers and Construction Union (AMCU) in 2014 resulted in:

- The platinum producers losing c.US$2.2bn in revenue;
- The striking employees losing c.US$1bn of wages; and
- Impacted 40% of global production of platinum.

This followed several years of social unrest and strikes across the mining industry in South Africa. With one of the most significant events being the killing of 44 people in one day, 34 of which were by police, near the South African operations of Lonmin in 2012.

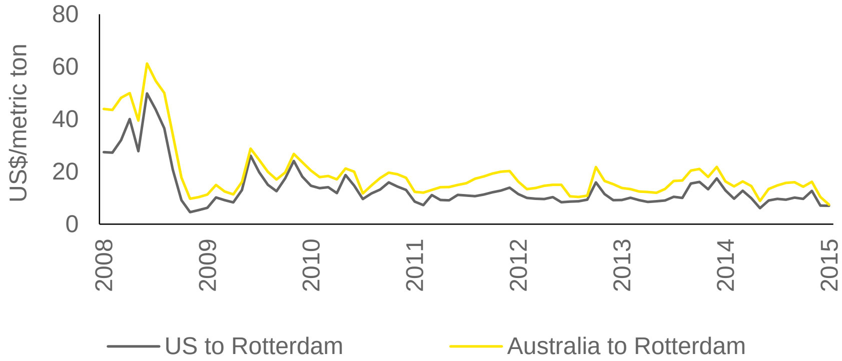
- Estimated that $57bn of projects in Peru may not materialise due to social conflict and unrest triggered by opposition to extractive projects, despite pro-mining policies by the governments.
- 149 conflicts were reported in 2014.
- The Tia Maria $1.4bn copper project is a specific example — there have been ongoing clashes since 2009 with community concerns that the mine will damage the environment and local agriculture. Three people were killed in protests and troops were deployed.

- In January 2014 the Indonesian Government introduced an unprocessed minerals export ban in order to encourage miners to process raw materials in Indonesia and invest in building smelters in the country.
- Three year exemptions were allowed for around 60 companies that carried out ore purification to a certain level; however an export tax was also introduced which was set at 25%, rising to 60% by H2 2015.
- Domestic nickel and bauxite miners have been the worst affected, with many halting or significantly reducing production.

The impact has been partly offset by a falling cost base …

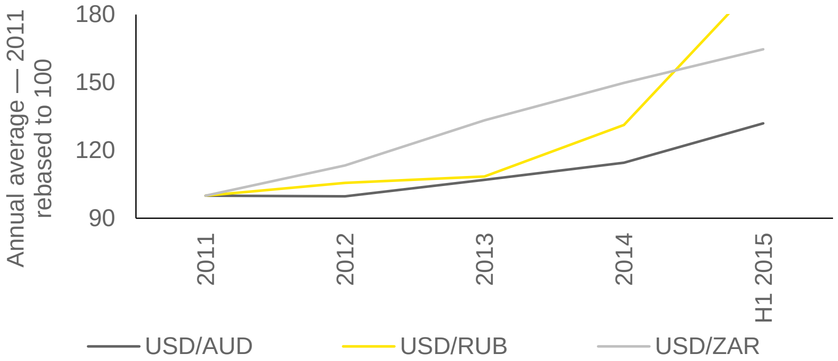
The following factors have had a positive impact on the cost base of mining companies:

A decline in freight costs



Source: IHS (McKloskey)

Local currencies have become weaker against the USD



Source: Oanda

Cost reduction and operational improvement programmes being implemented

Significant cost reduction initiatives have been implemented across the sector. These have primarily focused on:

- **Employment and external services** — Reversing excess mining wage inflation and reducing the level of spend on contractors;
- **Raw materials** — Negotiation with suppliers to reduce the cost of global mining consumables;
- **Energy costs** — Reduction in oil, gas and coal prices;
- **Overheads** — Divisional and corporate restructuring to reduce FTEs;
- **Discretionary spend** — Reducing spend on exploration and evaluation activities; and
- **Working capital initiatives** — Focus on releasing cash into the business.

"We have now delivered more than US$6.6bn of sustainable productivity-led gains over the last two years"

BHP Billiton 2014 annual report

"Achieved US$4.8bn of sustainable operating cash cost improvements and exploration and evaluation savings since 2012, of which US$1.5bn were in 2014"

Rio Tinto 2014 annual report

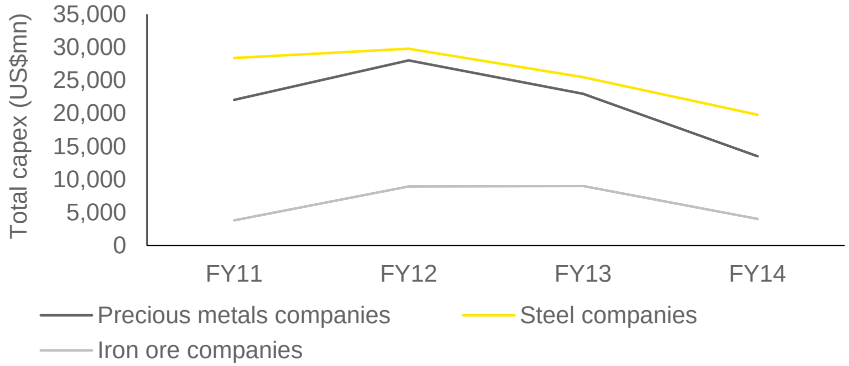
"US$2.3bn working capital release, excluding readily marketable inventories in 2014"

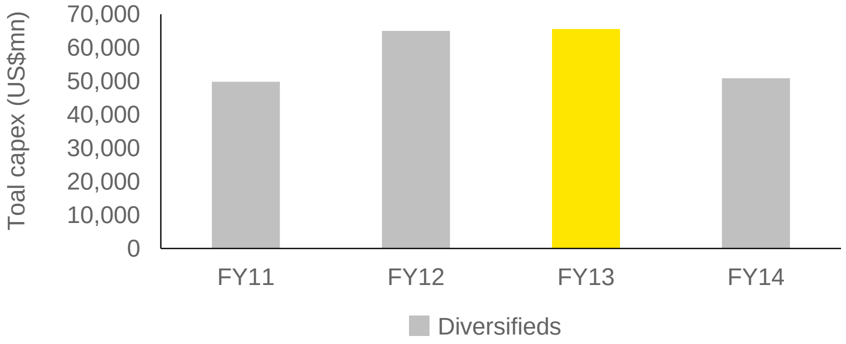
Glencore 2014 preliminary annual results presentation

… and lower capex alongside productivity improvements

The following factors have had a positive impact on the cost base of mining companies:

In general, mining companies have reduced their capital expenditure from 2012 levels

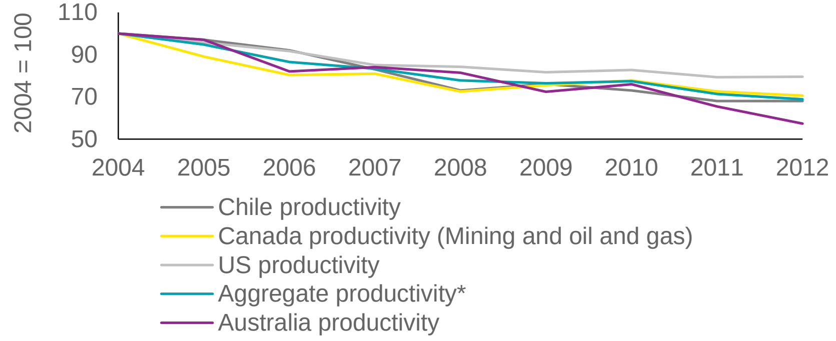




Source: CapIQ information on a preselected group of companies

A renewed focus on productivity improvements

Productivity was in decline prior to 2013 as miners focused on output at any cost in an unprecedentedly high commodity price environment.



Source: Country statistical data — data shows labour productivity rebased at 2004

The operational strategies starting to be implemented vary across the sector but may include:

- **End-to-end focus** — Breaking down silos which have been created within the business and involving each element in driving and creating value, e.g., Rio Tinto Hunter Blend.
- **Big data** — Collecting and analysing large volumes of operational data in order to monitor performance and benchmark operations, e.g., BHP Billiton global data software platform.

The immediate response — looking internally to optimize operations and externally to stabilize and then optimize capital structure

	"Maximizing what we have"			Accessing external solutions	
	1 Operational improvements	**2 Portfolio Management**	**3 Liquidity Management**	**4 Capital markets /M&A**	**5 Liability Management (including Ch.11)**
Major areas	**Employment —** reversing excess wage inflation, reduced contractor spend **Raw materials** — reduce the cost of consumables **Energy costs** — reduction in oil, gas and coal prices **SG&A** — divisional and corporate restructuring **Discretionary spend** — reducing exploration and evaluation activities	Optimizing the asset base: ▸ Pulling marginal projects ▸ Mothballing ▸ Closures ▸ Divesting non core assets ▸ Optimizing in and outbound streaming and royalty contracts	Maximizing sufficiency and availability of liquidity resources: ▸ Working capital enhancements ▸ Minimizing ongoing capex ▸ Release and repatriation of trapped cash ▸ Ensuring all facilities are available (managing covenant compliance etc.)	Driving solutions outside of the current stakeholder base: ▸ Raising funding from alternative capital providers ▸ Non-core assets D&A ▸ Positioning for an exit via takeover	Proactively dealing with: ▸ Debt maturities ▸ Unfunded pension obligations ▸ ARO management, self or third party coverage ▸ Need to consider other interests in the assets — royalties, streaming, maintenance liens, etc. May require refinancing or restructuring, in or out of Court
Requires	Methodical approach to effective improvements — risk that short term cuts compromise longer term value		Credible, dynamic business forecasting and integrated short term cash flow forecasting process	Free cash flow potential drives value considerations and appropriate capital structure; understanding the rights and characteristics of stakeholders drives negotiation; understanding tax and other factors drives process implementation	

The “how” — leading a business restructuring requires a holistic approach and usually a change of “tone” from the top

1 Strategy

2 Empower

3 Declutter

4 Appropriate footprint

5 Focus resources

6 Reinvest

The immediate response — looking internally to optimize operations and externally to optimize capital structure

"Maximizing what we have"

1 Operational improvements

Major areas

Employment — reversing excess wage inflation, reduced contractor spend

Raw materials — reduce the cost of consumables

Energy costs — reduction in oil, gas and coal prices

SG&A — divisional and corporate restructuring

Discretionary spend — reducing exploration and evaluation activities

2 Portfolio Management

Major areas

Optimizing the asset base:

- Pulling marginal projects
- Mothballing
- Closures
- Divesting non core assets
- Optimizing in and outbound streaming and royalty contracts

Requires (1 and 2): Methodical approach to effective improvements — risk that short term cuts compromise longer term value

3 Liquidity Management

Major areas

Maximizing sufficiency and availability of liquidity resources:

- Working capital enhancements
- Minimizing ongoing capex
- Release and repatriation of trapped cash
- Ensuring all facilities are available (managing covenant compliance etc.)

Requires: Credible, dynamic business forecasting and integrated short term cash flow forecasting process

Accessing external solutions

4 Capital markets /M&A

Major areas

Driving solutions outside of the current stakeholder base:

- Raising funding from alternative capital providers
- Non-core assets D&A
- Positioning for an exit via takeover

5 Liability Management (including Ch.11)

Major areas

Proactively dealing with:

- Debt maturities
- Unfunded pension obligations
- ARO management, self or third party coverage
- Need to consider other interests in the assets — royalties, maintenance liens, etc.

May require refinancing or restructuring, in or out of Court

Requires (4 and 5): Free cash flow potential drives value considerations and appropriate capital structure; understanding the rights and characteristics of stakeholders drives negotiation; understanding tax and other factors drives process implementation

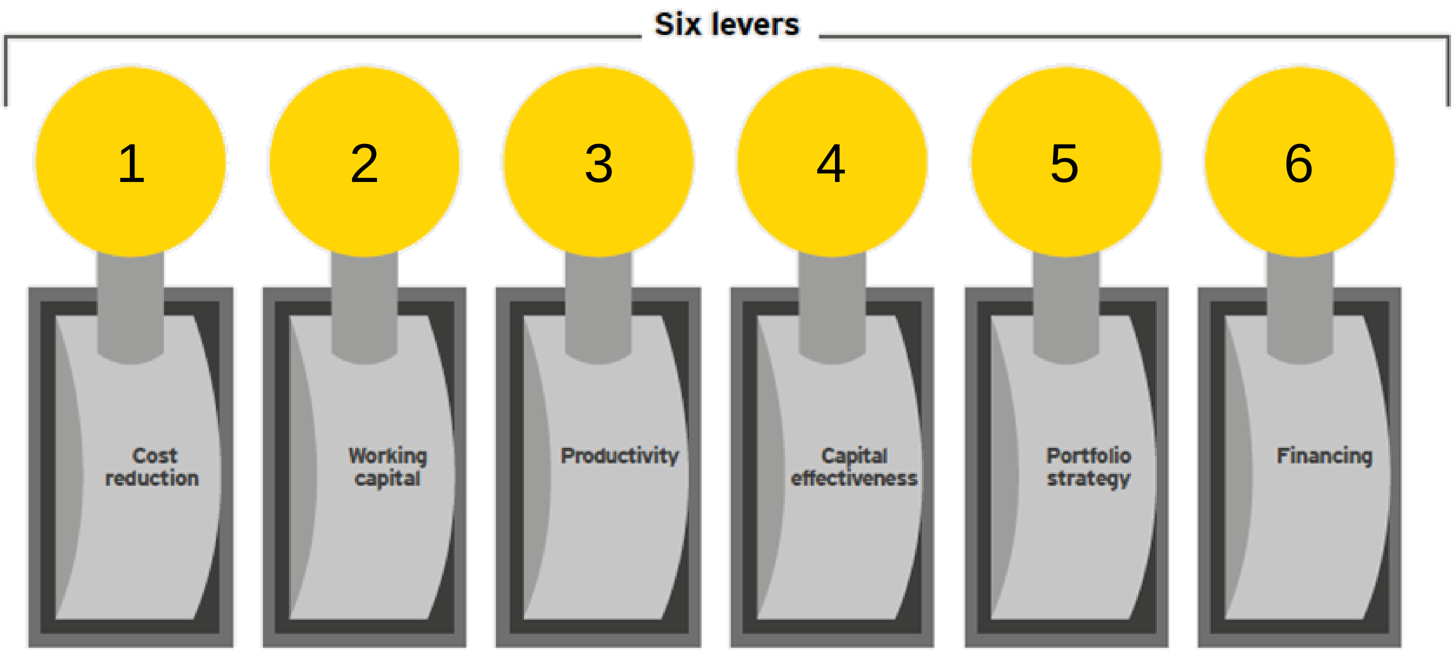
Liability management

- Widespread liability management in recent years:
  - Dividend cuts, divestitures, rethinking JV portfolios
  - Looking at infrastructure
  - Pushing out maturities — refinancing, debt exchanges, up tiering
  - Debt buy backs, including below par
  - Increased use of alternative finance (off balance sheet, trade financing, asset backed) and royalties, streaming
  - For some, debt: equity conversions including in the US using Chapter 11

… from survival to improvement …

From stabilization to improvement … six levers to deliver value

2017 to lay foundation for the next phase of growth



1 Cost reduction

1

General expenses

- Structured approach built from activity but don't ignore the "long tail"
- Travel v web meetings
- Safety equipment and "think before use" vending machines
- FMG reusable snack boxes

2

Low cost country sourcing

- Local sourcing can of MRO costs can create huge savings — 40%+, 50%+ savings observed
- As well as lower cost of "generics", moving away from OEMs can create competitive tension amongst suppliers

3

Offshoring/ outsourcing

- Two broad models in operation:
  - shared service center model, owned and operated by the parent group; or
  - outsourced to a third party provider
- Can be combined with offshoring
- Now moving beyond traditional IT, Finance, HR to technical areas

4

Procurement

- Area of focus for 3–5 years for most miners
- Opportunities in:
  - Automation and consolidation of procurement
  - Strategic procurement
  - Next stage innovation

2 Working Capital

From our experience working with the global diversified miners there are a number of elements to “get right” to quickly release cash as follows:

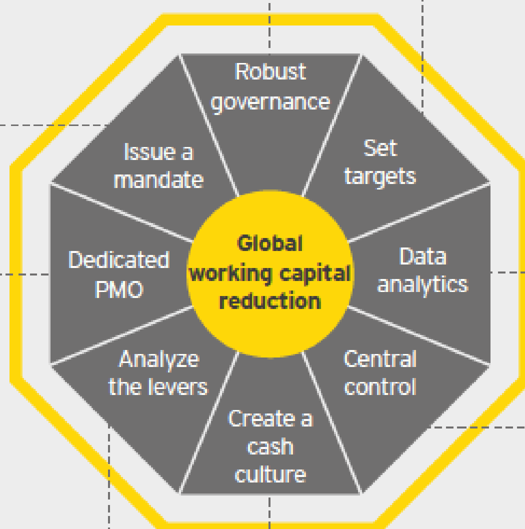
How to quickly release cash

1 Establish a global steering committee with representation across functions and business units – reporting to leadership

2 Obtain a clear mandate with clear sponsorship and communicated to the whole business

3 Apply dedicated resourcing (internal and external) for the program management office

4 Quickly analyze all of the working capital levers and identify if an opportunity exists



5 Set working capital reduction targets that are signed off and monitored by leadership

6 Establish working capital dashboards that use transactional data to monitor and make decisions

7 Increase visibility of the program and control from the center to gain momentum, e.g., through a cash war room

8 Apply a strong focus on sustainable change management at the front line, as they control the levers

3 Productivity

The key to achieving long-term sustainable productivity improvement

1

Focus on the assets — an end-to-end view

- Breaking down silos
- Four dimensions:
  - Safety
  - Cost
  - Productivity
  - License to operate
- Requires:
  - Governance
  - Optimal asset utilization/OEE
  - Data analytics/decision support
  - Engagement

2

Relentless pursuit of loss

- Identify, understand and resolve losses:
  - Reliability
  - Utilization
  - Throughout
  - Quality
- Manufacturing-like focus on system capabilities to enhance material flows and equipment effectiveness — drives productivity gains through stable, predictable operations

3

Focus on leadership and culture

- Engagement
- Measurement and reward
- Ongoing talent management

4 Capital Effectiveness

1

Advanced asset management — productivity at the right cost

- Balance
  - Productivity
  - Cost
  - Risk
- OEE
- Condition based maintenance
- Predictive analytics

2

Sustaining capital — many are cutting, but should they?

- Risk that sustaining capital is cut/deferred
- Moving away from traditional approaches to criteria based approach:
  - Identification
  - Prioritization
  - Execution

3

Capital productivity — not at one-off exercise

- Capital inefficiency is endemic in the sector
- Improvement requires:
  - Focus of the right projects
  - Do the right projects well
  - Create a feedback loop
  - Compare competing designs on capital risk exposure

5 Portfolio strategy

- Active and dynamic portfolio management drives superior returns
- A portfolio approach should include:
  - choice of commodities/territories
  - factoring in country risk
  - singe basis of risk/return comparison
  - recognise long term forecast uncertainty
- Regular portfolio reviews — grow/ maintain/fix/divest
- Understand embedded optionality is assets and underlying liabilities
- Communicate

6 Financing

- Leverage increased to sector record levels at the end of the supercycle …
- … but the increased level of fixed income and covenant lite financing provided a cushion
- Widespread liability management in recent years:
  - Dividend cuts, divestitures, rethinking JV portfolios
  - Looking at infrastructure
  - Pushing out maturities — refinancings, debt exchanges, up tiering
  - Debt buy backs, including below par
  - Increased use of alternative finance (off balance sheet, trade financing, asset backed) and royalties, streaming
  - For some, debt: equity conversions including in the US using Chapter 11

… to optimization and eliminating the “integration gap”

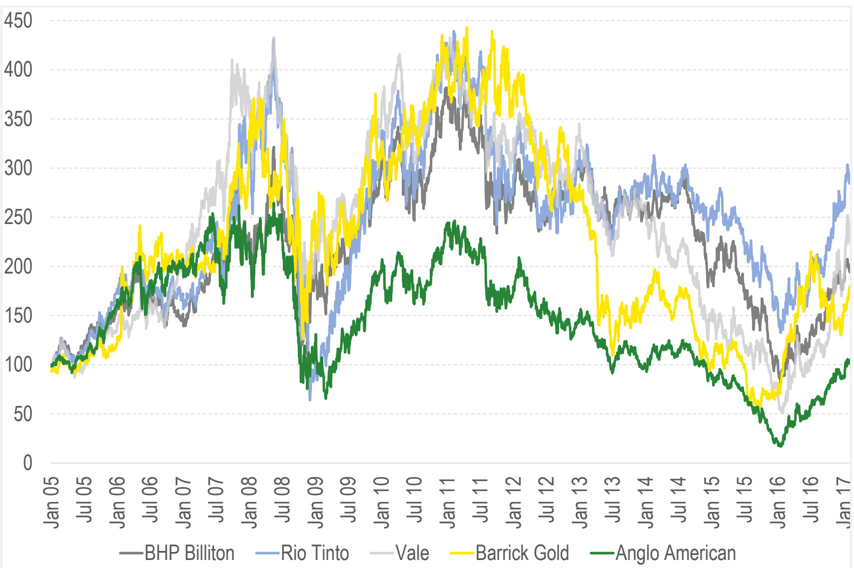
The cyclical downturn bottomed in Q1'16

…and the commodity price rebound looks set to continue

- Miners financial performance improved in 2016 reflecting better pricing environment
- Balance sheets have improved and some players will begin to prepare for growth
- However, foundations need to be tailored to particular commodities and markets

Market capitalisations improved due to better cash flows and healthier balance sheets

Indexed market capitalisation, 1Jan 2005 =100



Share price changes in 2016, % q-o-q

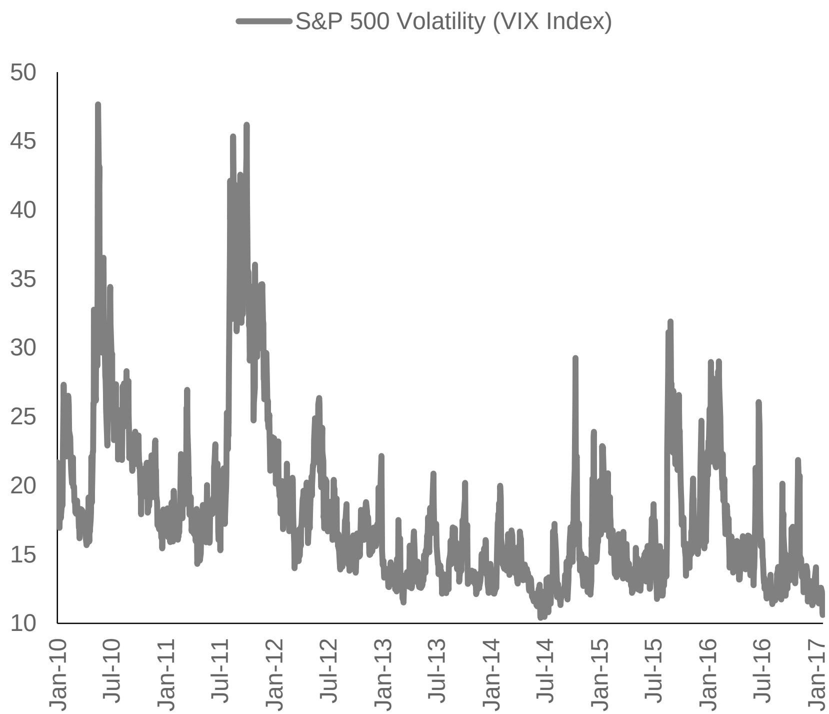
	Q1	Q2	Q3	Q4
BHP	-21%	18%	19%	26%
RIO	-17%	12%	17%	22%
Anglo	-16%	64%	31%	34%
Vale	-28%	45%	14%	49%
Glencore	13%	26%	31%	39%
FTSE*	-9%	22%	24%	21%

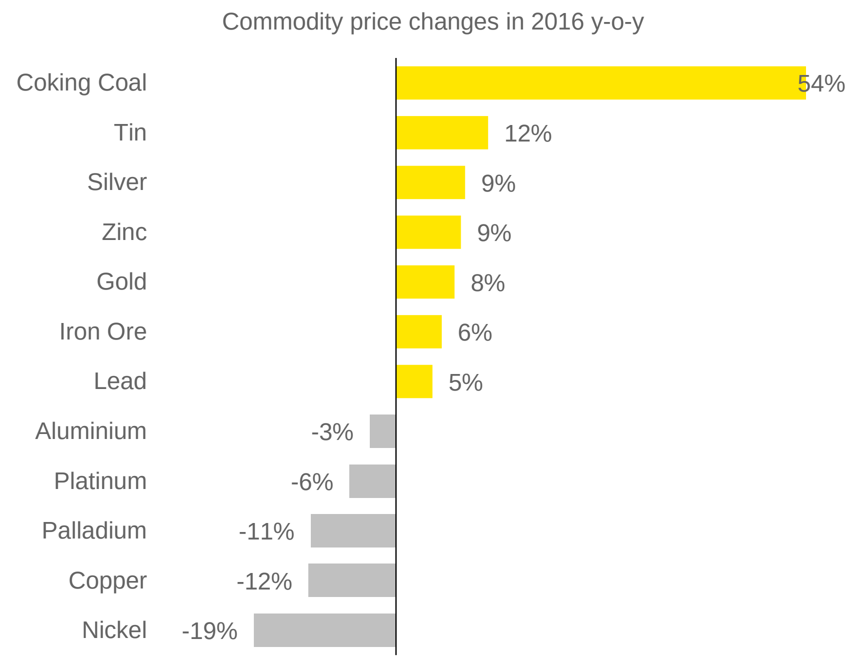
Note: * — FTSE All share mining index

Focus on portfolio optimization remains key

…as well as achieving a balanced capital agenda

- Portfolio realignment reflecting changes in strategy and commodities outlook
- Critical evaluation of asset competitiveness and fit with overall strategy
- Balance capital discipline with growth and shareholder expectations
- Become more sustainable and resilient to economic shocks as volatility continues

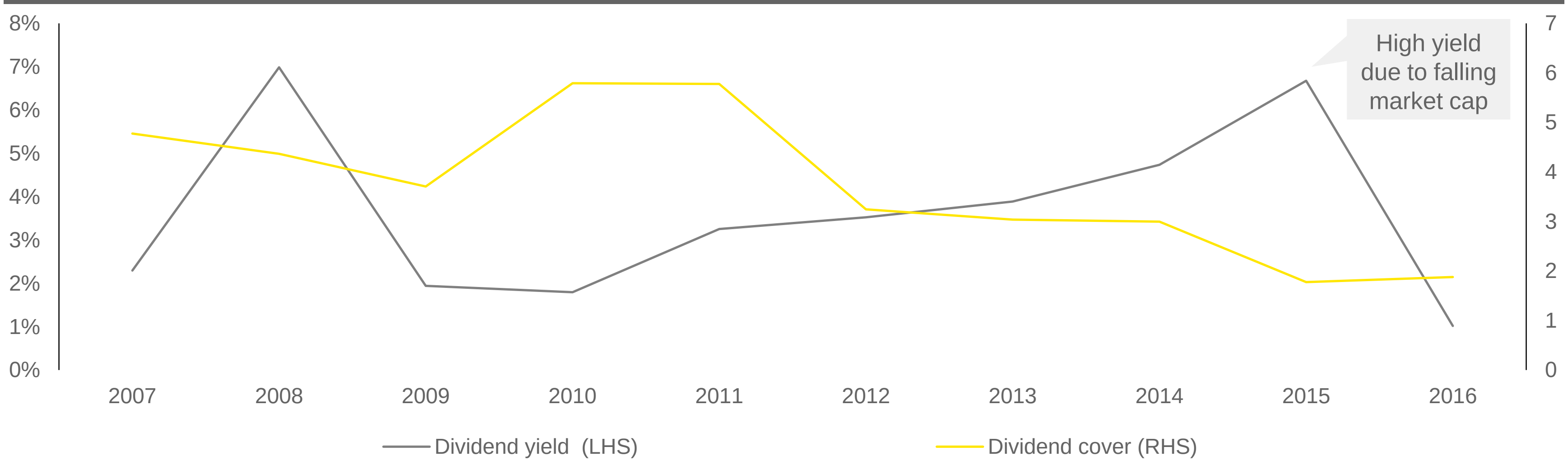




…as managements clarify dividends policy

- Growth prospects have improved, providing opportunity to invest capital…
- But first, management will need to focus on shareholder, both returns yield and price appreciation
- Dividend policies to be linked to earnings and cash flows and communicated
- Continued need to balance broader capital agenda i.e. dividends, debt, capex

Shareholder returns came under pressure from falling profits



Note: Based on a sample of 88 mining companies from available information provided by S&P Capital IQ
Source: EY, S&P Capital IQ

Drivers of M&A diverge by commodity

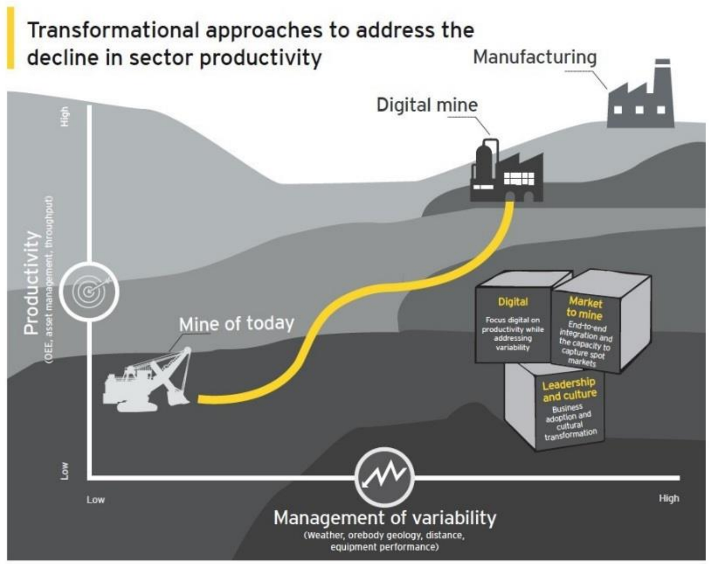
…and in some cases by geographical region

- 2017 to lay foundation for the next phase of growth
- However, foundations need to be tailored to particular commodities and markets
- Drivers of deal activity to be influenced by diverging fundamentals
- Corporate strategies to shift away from herd mentality seen during super cycle period

Commodity	Key Drivers for Deal Activity	Regional drivers
Coal	► US consolidation and portfolio optimisation ► Restructuring — building sustainable supply in Asia ► Environmental regulations to reduce fossil fuels	► US consolidation ► Securing domestic supply in Asia
Gold	► Move to lower cost mines ► Replenishment of depleted reserve base ► Better access to capital	► Diversification; move to lower political risk jurisdictions
Copper	► Supply deficit due to limited exploration expenditure ► Grade erosion ► Expected tighter long term fundamentals	► Scarcity of new deposits and falling grades in Chile, Australia & Indonesia

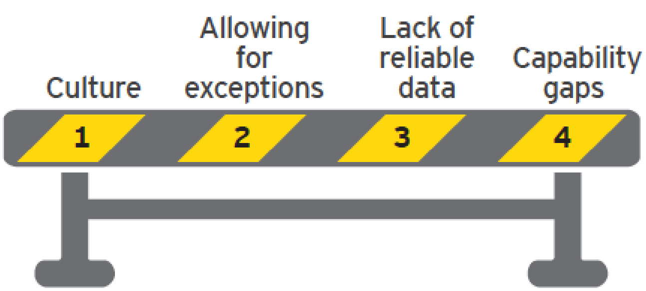
Closing the “integration gap”

Achieving high productivity and better management of variability is possible …



… but it requires a manufacturing-like end to end approach to process improvement …

Value chain	1.0 Acquire and explore	2.0 Appraisal and resource planning	3.0 Develop and execute	4.0 Extract ore
	5.0 Process ore	6.0 Manage mine logistics	7.0 Manage sales and marketing	8.0 Perform reclamation
Value chain management	9.0 Develop strategy	10.0 Manage enterprise portfolio	11.0 Manage capital projects	12.0 Manage commercials and licenses
	13.0 Manage physical assets			
Business support processes	14.0 Manage supply chain	15.0 Manage financial resources	16.0 Develop and manage human capital	17.0 Manage quality
	18.0 Manage governance, risk and compliance	19.0 Manage information technology	20.0 Manage cybersecurity	
Technical support processes	21.0 Develop and manage technology	22.0 Manage health, safety and environment	23.0 Manage external relationships	24.0 Manage knowledge improvement and change structure



… and leadership ready to identify and overcome barriers to progress

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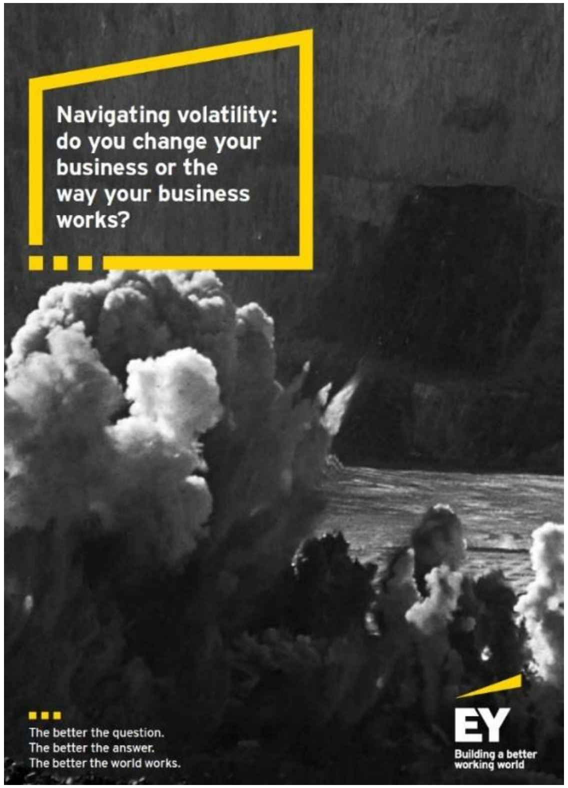
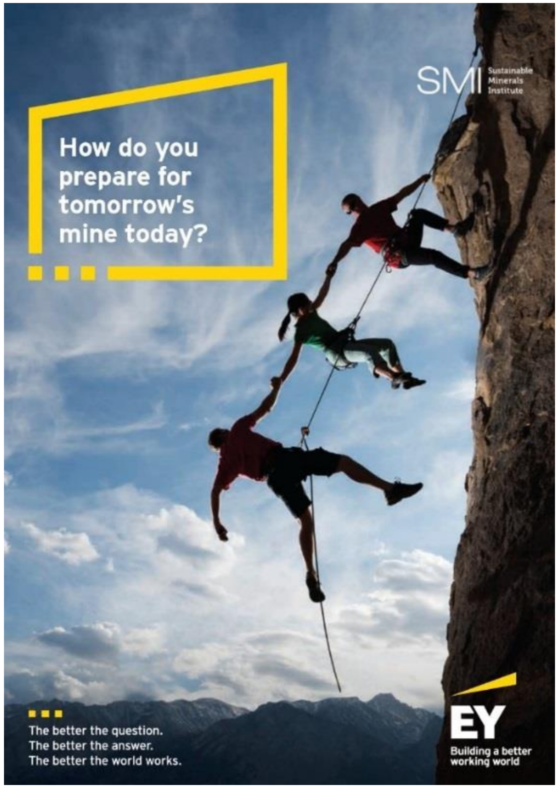
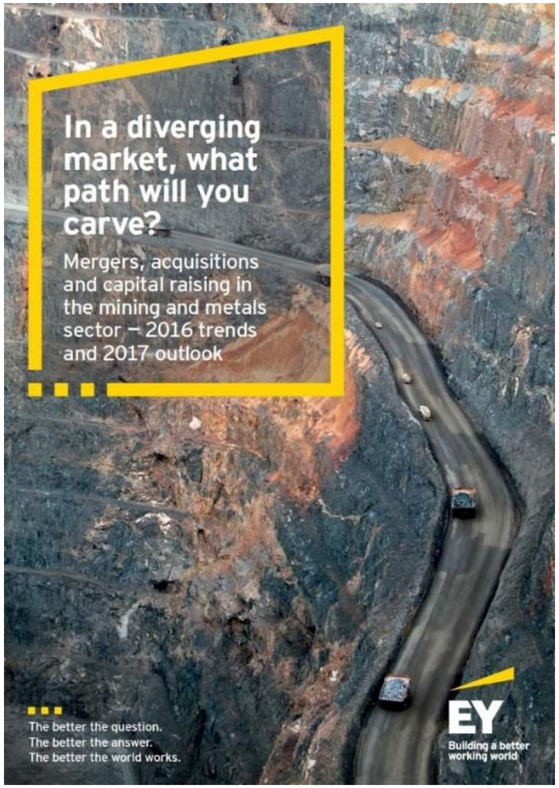
EY publications

EY is active with our clients globally in seeking ways to drive improvements in the sector; we publish our findings in a series of highly regarded papers, available online







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Creating VALUE in a cyclical environment

2017 SME ANNUAL CONFERENCE & EXPO
CMA 119th NATIONAL WESTERN MINING CONFERENCE

SME CMA

DENVER, COLORADO | FEBRUARY 19-22, 2017

Integrated Business Planning (IBP) - An enabler for raising capital

Ajay Kumar
KPMG LLP

Agenda

1 **Current environment in Mining**

2 Overview of Integrated business planning

3 IBP in a global mining client

The mining industry is under stress from a variety of sources

EXTERNAL PRESSURES

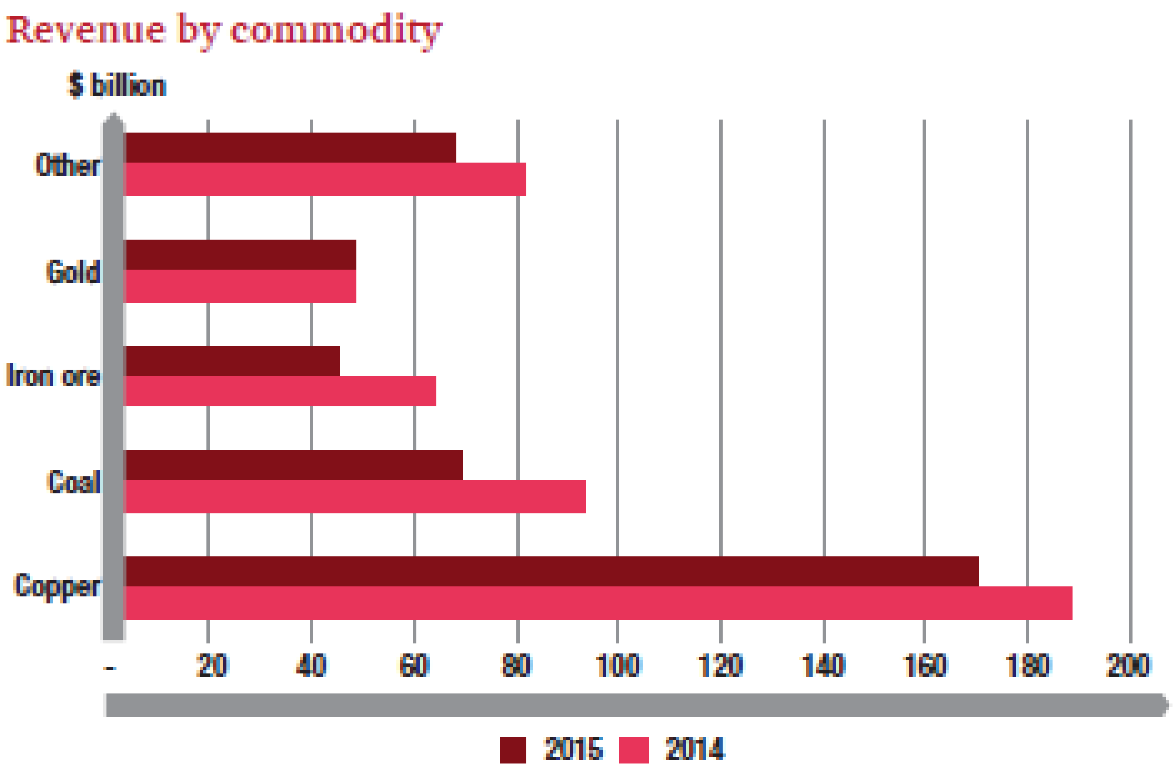
- Investment taps turned off
- Record impairments
- Investors discount long-term value
- Fall in commodity prices
- Slowing global demand
- Geographic & Social challenges

INTERNAL PRESSURES

- Organizational Complexity
- Skills Shortage
- Falling ore grades
- Disparate Systems
- Budget Constraints / Cost pressure
- Adoption of new technology

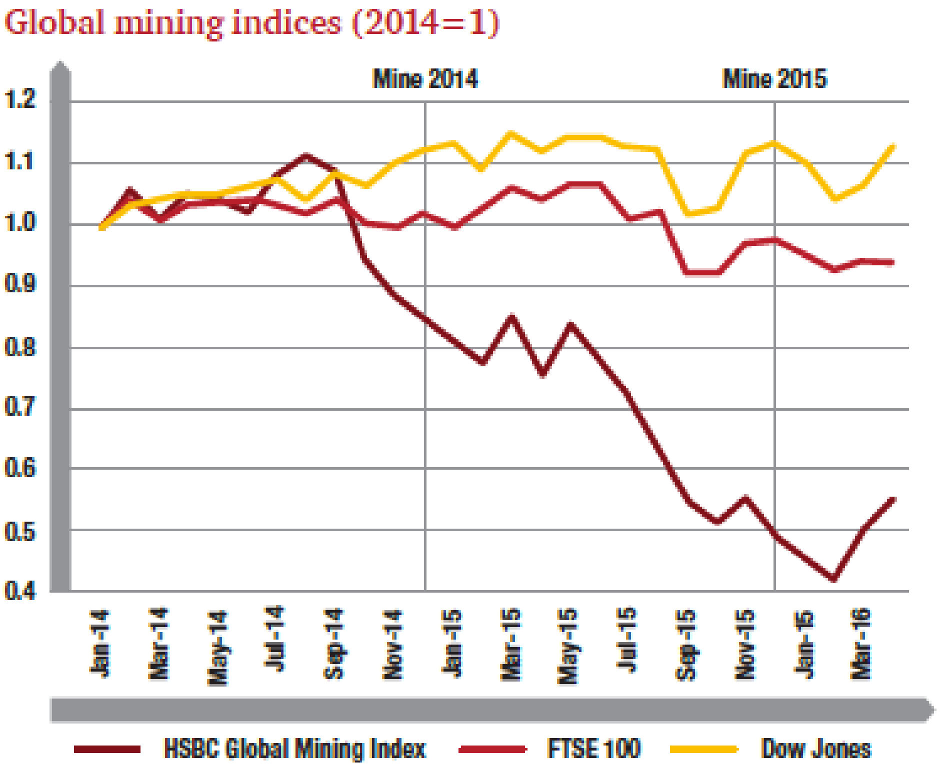
Lower revenues and weaker sentiments

Despite increased production levels, spiraling commodities prices drove revenues down 20%



Note: Chart excludes Glencore's marketing and trading revenues, and certain other companies' non-mining revenues

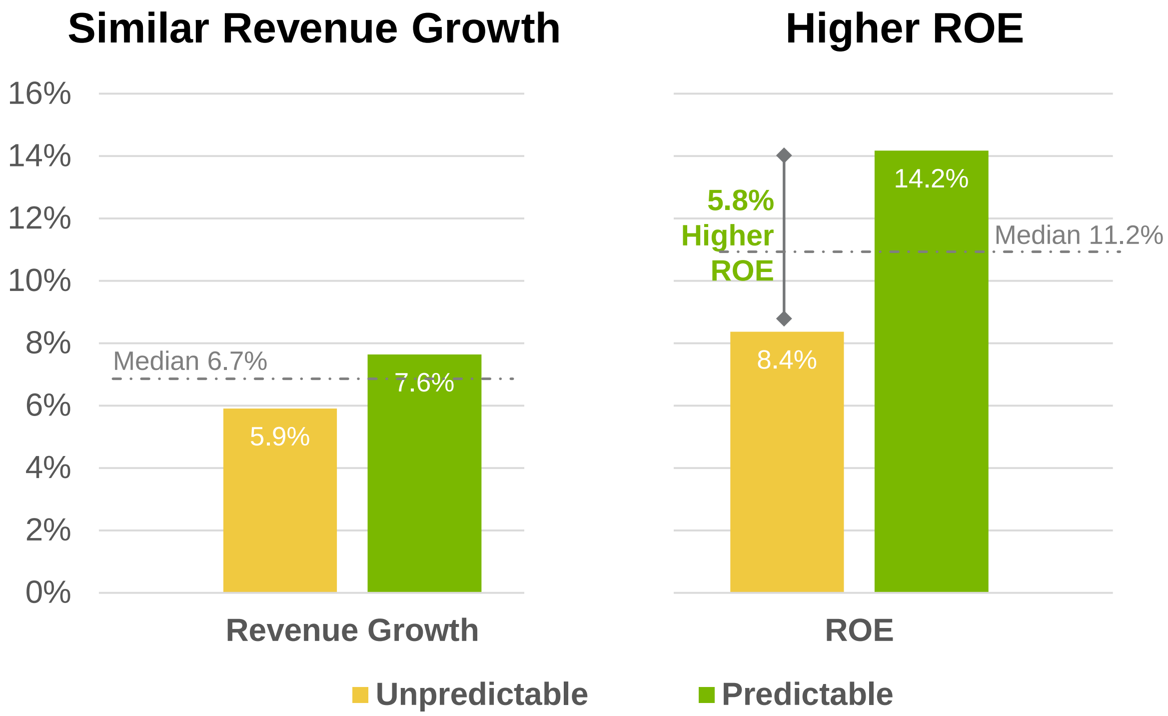
The gap between miners and the broader market widens



Source: Bloomberg

Manufacturing companies that plan well and meet earnings expectations deliver 6 points higher ROE

Predictable companies outperform unpredictable companies by a very large margin
even after removing companies that often fall short of earnings targets from the population



Analysis compares revenue growth and ROE of ‘predictable’ companies versus ‘unpredictable’ companies

- ‘Predictable’ firms rarely miss earnings (<= 20% of years)
- ‘Unpredictable’ firms often miss earnings (>= 60% of years)

ROE Advantage = Median ROE of ‘predictable’ companies – ROE of ‘unpredictable’ companies
Growth CAGR = Median Revenue CAGR of ‘predictable” companies – Revenue CAGR of ‘unpredictable’ companies
Population = Capital Goods and Automotive companies over $500M revenue with Capital IQ earnings data for at least 4 of 6 study years (2009 – 2014)
A year is considered a ‘miss’ when actual earnings are off by 10% of expected earnings for the year

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IBP harmonizes financial and operational processes with customer demand

Integrated Business Planning (IBP) aligns strategic planning, operations planning, finance, supply chain, sales, marketing and product development

By achieving three primary objectives

INTEGRATE PLANNING ACTIVITIES

Integrate strategic, finance, sales, product and operations planning activities

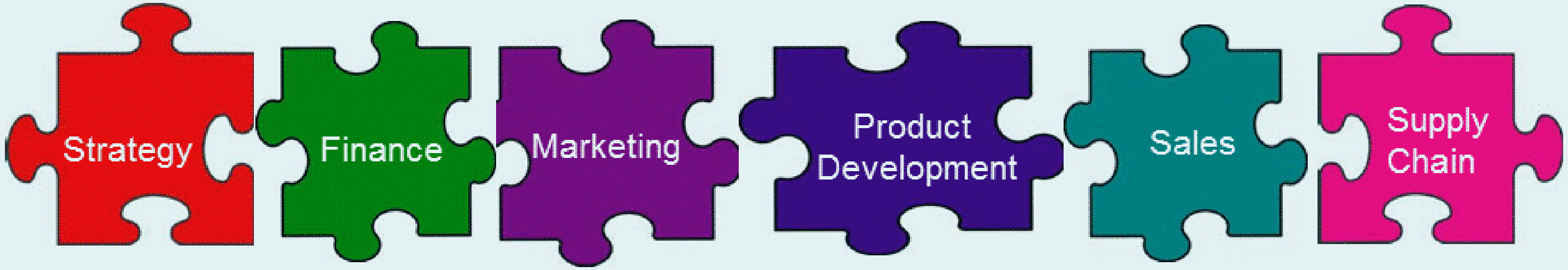
UNDERSTAND KEY BUSINESS DRIVERS

Increase shared understanding of key business drivers

IMPROVE BUSINESS DECISIONS

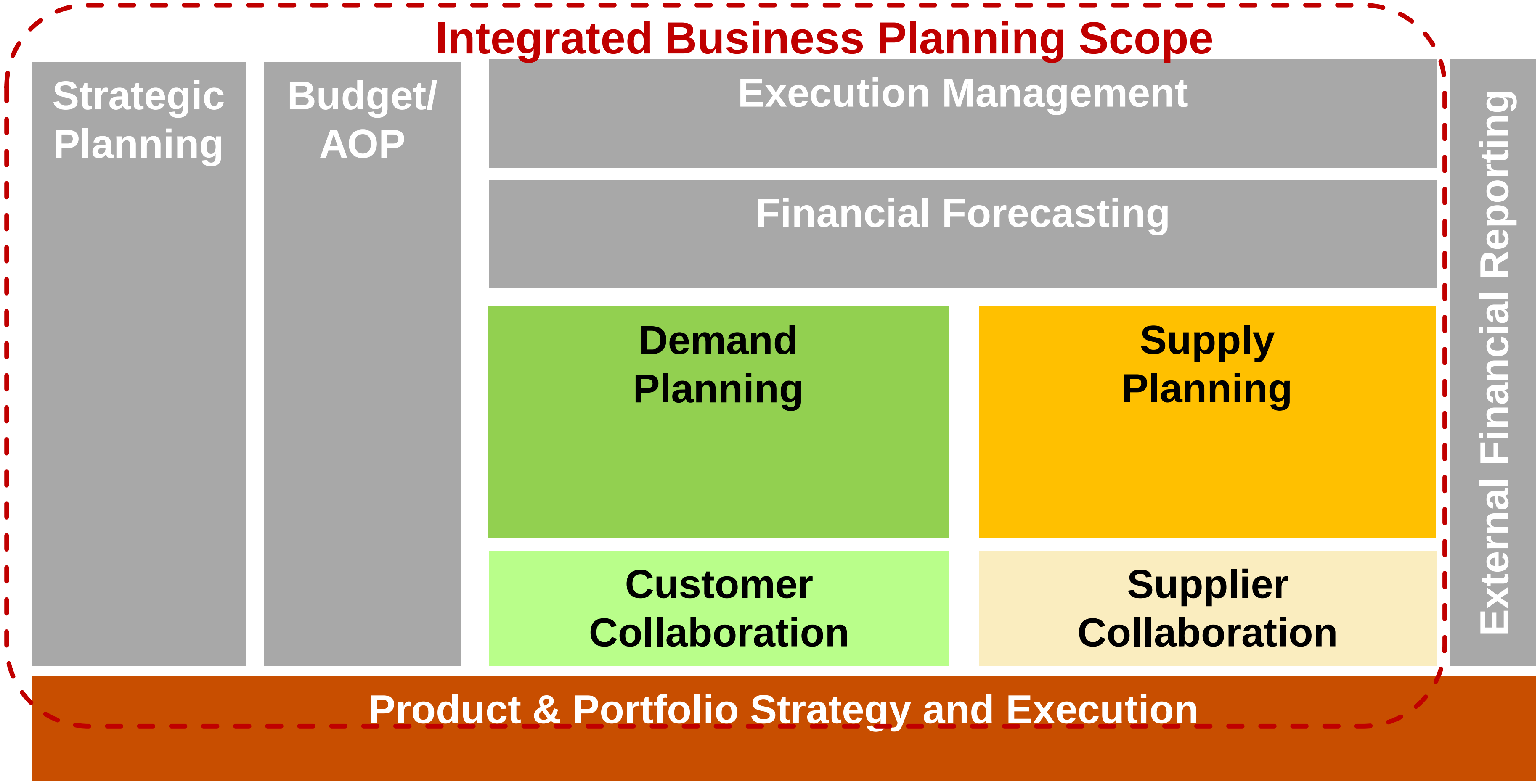
Optimize business decisions for improved financial & operational performance

Through an IBP Center of Excellence (COE)



IBP Conceptual Model covers all elements of end-end Business Planning

IBP brings strategic planning, finance, supply chain, sales & marketing and product development into a ***unified planning operating model*** to drive significant performance improvement decisions



In addition to increased financial predictability, a successful IBP implementation often captures 1% – 3% margin points

Integrated Business Planning leads to the following key benefits…

- ✓ Better results; predictable companies outperform unpredictable
- ✓ Better business decisions
- ✓ Faster planning cadence
- ✓ Identifying risks and opportunities more consistently and sooner
- ✓ Agreeing to optimal cross-functional resolution
- ✓ Improving strategic vs. tactical time investment
- ✓ Increased trading partner trust
- ✓ Coordinated capital investments
- ✓ Analyzing alternatives with common facts and assumptions across functions

BHP Billiton Seen With Higher Profits, Lower Debt
Wall Street Journal 2/20/17

Barrick Gold Posts First Annual Profit in Five Years
Wall Street Journal 2/15/17

Rio Tinto Shows Prudence Pays Off
Wall Street Journal 2/08/17

…and impacts all components of the financial statements

Key Income Statement Drives

Revenue
- Sales
- Pricing
- Marketing
- M&A

Cost
- Direct Procurement
- MfG
- Logistics
- SG&A
- R&D
- Corp. Exp.

Key Balance Sheet Drivers

Investment
- Inventory
- Accounts Receivable
- Accounts Payable
- Fixed Assets

Development of a mature IBP capability requires organizations to deliver across six dimensions

Key Dimensions:

Business Process

Outlines the specific business events, steps, integration points, outcomes and measures, as well as, the required policies and procedures used to execute the IBP process

Data and Reporting

Defines the information, reporting and KPIs required to drive better decision making capabilities across the organization and with key stakeholders

Supporting Technology

Enables technologies and tools that are used to support the IBP processes, execute key activities and generate reports / analytics

Governance/Controls

Establishes a COE that will manage and maintain the standardized processes, procedures, data structures/master data used for IBP

Service Delivery Model

Defines how IBP activities and outputs are performed and delivered throughout the organization; outlining who and where activities are executed

Organization

Defines the talent necessary (skills, capabilities and competencies) required to support IBP process and activities, as well as associated R&R and incentives

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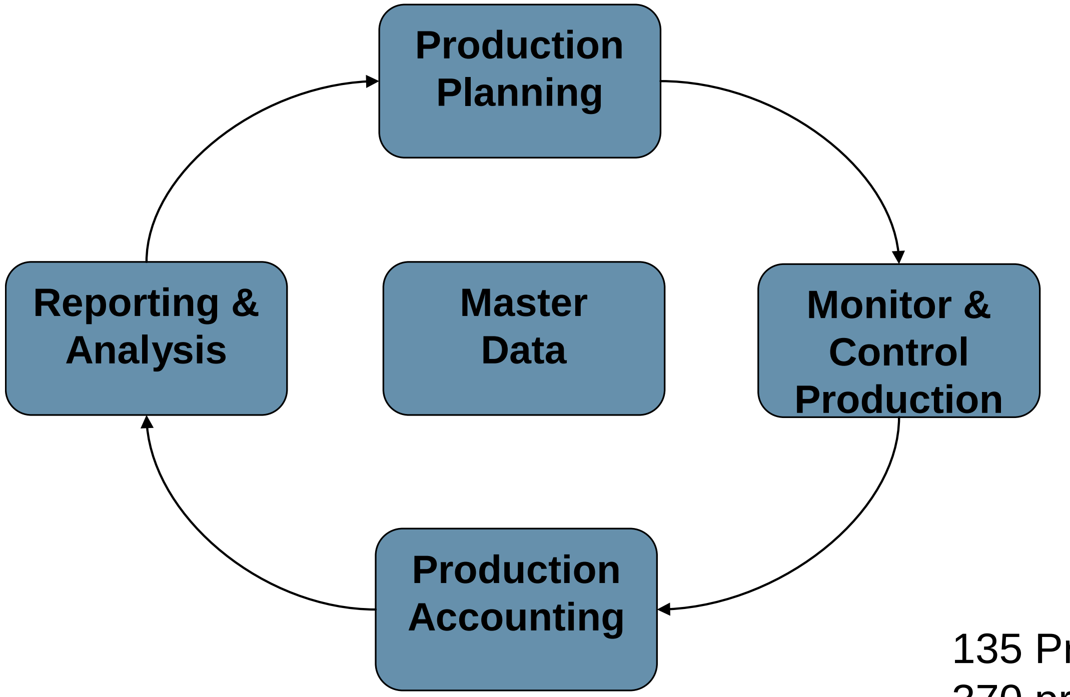
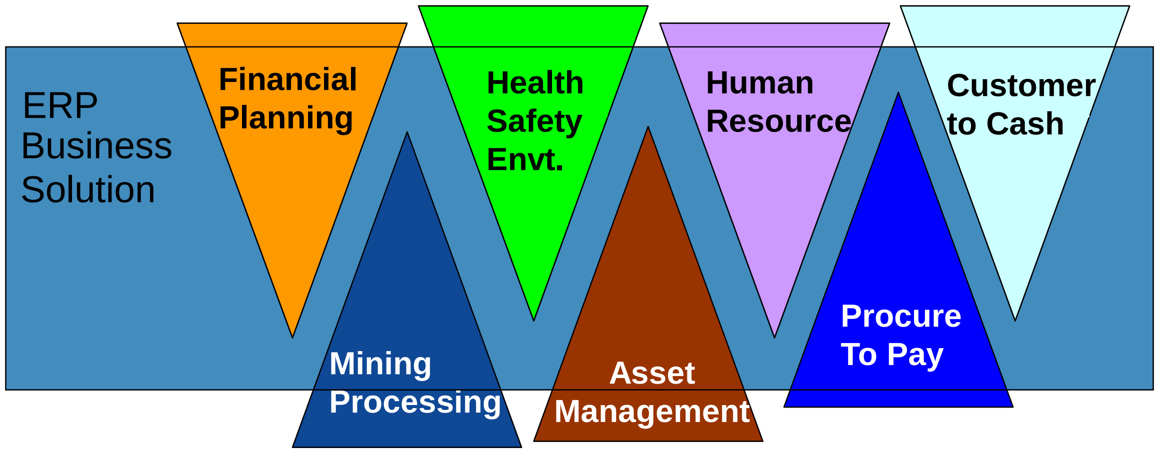
Global mining client – Silo Planning

Plan-Execute-Compare-Adjust Cycle



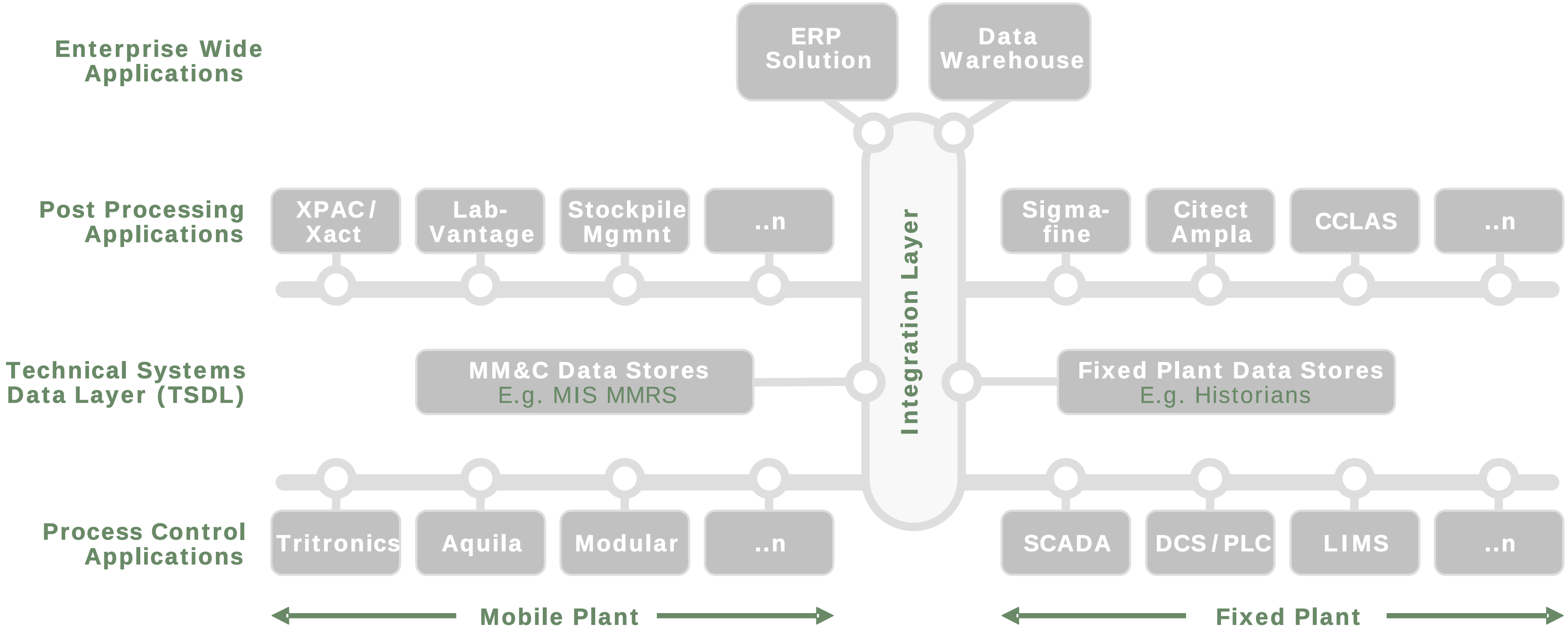
Cross-functional Planning



135 Production Processes
370 production and sales plants
8539 production materials tracked
- 4900 saleable products
- 3600 intermediate materials
- 439 procured raw materials
- 139 waste materials

Conceptual Systems Interfaces

9 Business Units
13 Interfaces
21 Source Systems



Typical challenges that require leadership, expertise and systematic changes

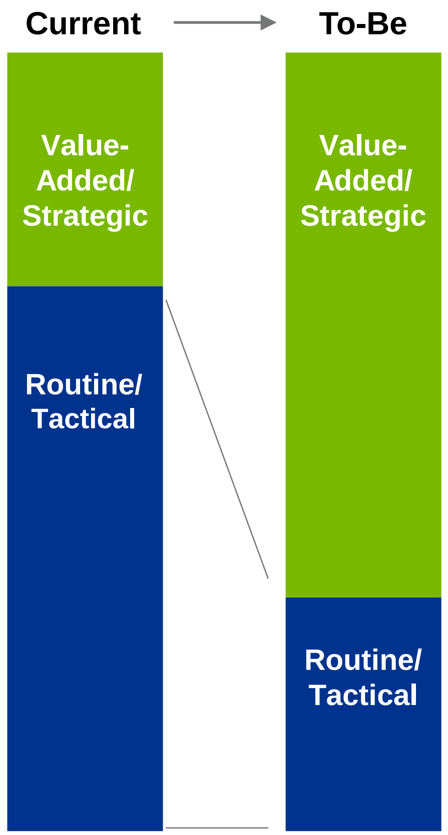
Dimensions:	Challenges:		
Business Process	Unclear and / or Cumbersome Consensus Demand Planning	Misaligned Financial and Operational Plans	Limited Collaboration with Trading Partners
Data and Reporting	Inconsistent Taxonomies across Functions and Regions	Limited Product Lifecycle Integration	Focused on Historical, not Leading Indicators
Supporting Technology	Disparate Legacy Systems / No Single Source of Truth	Difficulty Generating Financial Scenarios	Limited Extended Visibility
Governance and Controls	Ill-defined Planning Policy and Controls	Lack of Continuous Process Improvement	Lack of Master Data Management (MDM)
Service Delivery Model	Dispersed Analytic Skills	Supply Planning Scope Doesn't Support Global Decision Making	Process Owner Not Considered Balanced and influential
Organization	Limited Executive Participation and Ownership	Competing Agendas	Lack of Accountability and Participation

IBP Leading Capabilities

Objective	Leading Capabilities	Description
Integrate Planning Activities	Partner Co-Planning	Collaborate efficiently and effectively with partners on both demand and supply side
	Parallel Financial and Operational Forecasting	Conduct integrated forecasting between Finance and Operations enabled by aligned taxonomies, semantics, technology, and cadence
	Global Compliance	Enforce planning policies and process compliance, including cross-functional/ enterprise collaboration, global vs. regional decisions, RACI, and master data management
	Change Management	Drive both step change and continuous process improvement to deliver quick wins and longer term transformation
	Center of Excellence (COE)	Build specific advanced skills in a center of excellence owned by C-level executive to drive process with fact-based analysis and appropriate influence
Understand Key Drivers	Analytics & Reporting	Provide actionable data analysis across functions to support decision making – including leading indicators - as well as actuals and planning reporting
	End-to-End Visibility	Deliver 'real-time' information visibility, 'single version of the truth', across multiple taxonomies, functions and partners
Improve Business Decisions	What-if Scenario Analysis	Run what-if scenarios that summarize impact on service level/revenue, assets, operating cost and risk for most effective executive decision making
	Aligned Incentives	Balance functional and cross-functional incentives and KPIs to align operations while maintaining flexibility to support current priorities and focus initiatives

IBP drove the shift from transactional to value-added activities

Future State



IBP helped…

- ***Integrate functions to accelerate and improve decisions***
  - Provide capability to anticipate, predict and detect events to positively impact business outcomes
  - Enable scenario analysis based on common assumptions and drivers
  - Synchronize functions to accelerate decisions that stick
- ***Optimize Finance***
  - Enable Finance to become a more dynamic Business Partner
  - Improve speed and relevance of performance reporting and analysis
  - Enhance the Planning, Budgeting & Forecasting processes with shared KPIs, metrics, driver based analysis, and predictive capabilities
- ***Enhance Operations***
  - Provide support for information required to run the business
  - Reduce disconnects across functions, smoothing operations
  - Provide cross-functional forum for strategic operations decisions


Thank you...

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The 2017 SME Annual Conference & Expo

CMA 119th National Western Mining Conference, Denver, Colorado

Accessing Capital in Mining Today: Managing Through the Cycle

Cynthia Urda Kassis

February 20, 2017

2017 SME ANNUAL CONFERENCE & EXPO
CMA 119th NATIONAL WESTERN MINING CONFERENCE

What a difference a year makes!

February 2016

- Industry-wide re-rating
- Fundamental demand change
- New pricing bottom?
- Armageddon!

February 2017

- Signs of Hope
- Signs of Recovery

Current market dynamics

THE GOOD NEWS

- Funds are available
- A number of sources
- Traditional: Liquidity is thawing
- Alternative: Options expanding; activity increasing
- New/broader spirit of cooperation

Current market dynamics (continued)

BUT CHALLENGES REMAIN

- Price recovery for some, not all commodities
- Overhang of negative headlines in 2016
- Liquidity constraints
- A financier's market

Characteristics of recent mine financing plans

- More complex than in past
- Mix of traditional and non-traditional sources
- Staged implementation
- Flexibility/creativity/persistence

Lessons learned

Markets continually change - some quickly; others evolve

Don't dismiss traditional sources

Alternative sources continually changing
- number by their nature are very flexible
- market influences

Consider the consequences

Real versus theoretical financing options: Driven by
- market and purpose
- specifics: commodity, jurisdiction, sponsor

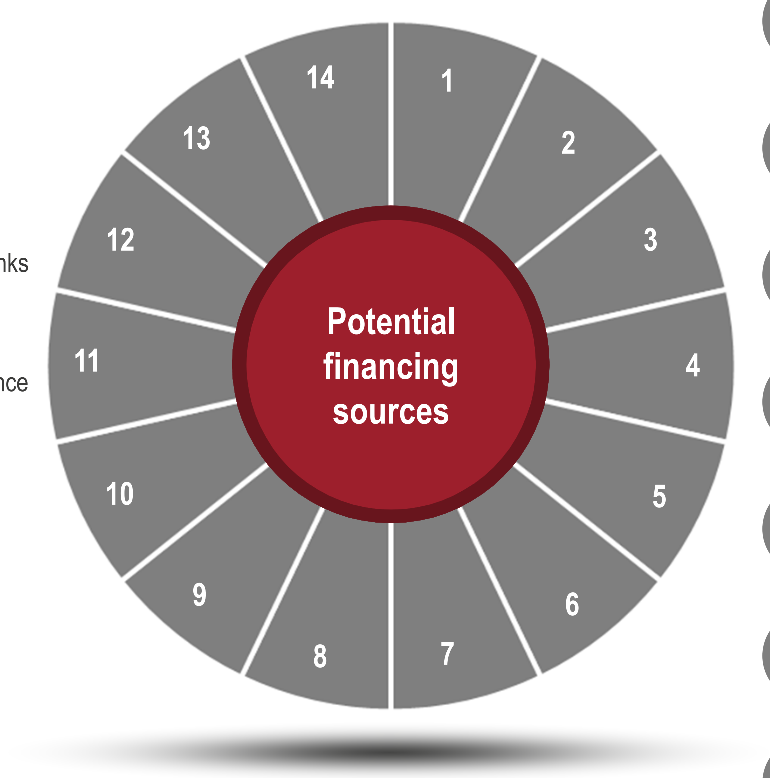
Flexibility and creativity remain key

Consider parallel pathing options-if possible

As competition rises......

Potential sources: mine financings

1. Commercial banks – International/regional/local
2. International/domestic capital markets – corporate/project/high-yield bonds
3. National/regional/global development banks and export credit agencies
4. Non-bank institutional investors – insurance companies, pension funds
5. Subordinated/mezzanine PE/hedge fund investors
6. Sovereign wealth funds
7. Offtakers or prepaid purchasers



8. Vendor lenders/equipment lessors
9. Strategic investors/Asian trading companies
10. Commodity traders
11. Construction contractors
12. Sponsor tranches
13. Royalty/streaming companies
14. Other alternative sources

Questions?

Our global mining & metals offering

01: Our broad financing practice is particularly important in times of liquidity constraints. We regularly work on debt and equity capital market issuances involving the U.S., European and Asian markets, and we are expert in the Canada-U.S. MJDS, London and Hong Kong's listing rules for mineral companies. We regularly work on project financings involving syndicated commercial bank loans and multilateral/export credit agency facilities. We also advise on innovative financings from alternative sources such as private equity, sovereign wealth funds, hedge/pension funds, strategic/industry investors and streaming/royalty companies.

02: Our unified, global legal team efficiently advises across jurisdictions and practice areas addressing crucial issues. Our longstanding teams focused on Asia, the Americas and Africa are ideally placed to assist on transactions involving equity investments, joint ventures, off-take arrangements, financings and equipment/construction services contracts from Asia (e.g., China, Japan and Korea) into the Americas and Africa.

03: We have significant experience assisting clients in the context of transformative transactions and corporate restructurings around the globe for strategic purposes or in a distressed context. We are adept at best preserving the value of existing investments and maximizing opportunities presented by distress (e.g., loan-to-own strategies).

04: The development of new mines now regularly entails the development of some or all of the related infrastructure, such as transportation, power and water. With a Tier 1 global infrastructure project practice, we are ideally suited to assist our clients in formulating sophisticated solutions to infrastructure issues arising in connection with mining projects as well as addressing the "project-on-project" risks that can arise.

05: During this time of unprecedented shareholder activism on strategic, operational, social, environmental and governance matters, our team works with companies around the globe on their most sensitive governance, disclosures, compliance, executive compensation and other strategic and contentious matters.

06: Business risks related to fraud and corruption in the mining and metals sector are an unfortunate reality. We represent corporate and individual interests in government investigations, develop and implement global anti-corruption compliance programs and monitor entities' compliance programs pursuant to agreements entered into with the government.
We also regularly conduct compliance reviews and internal investigations.

07: Our team regularly advises on the resolution of significant foreign investment and commercial disputes, including those involving resource nationalism, joint ventures, construction and off-take arrangement disputes. We also advise during the predispute period to assist in avoiding litigation or arbitration, if possible. If unavoidable, we develop strategies on how best to position our clients. We regularly represent clients in treaty arbitrations, ad hoc dispute resolutions or arbitrations under the rules of all major arbitral institutions.

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NON-TECHNICAL CONSIDERATIONS IN THE DUE DILIGENCE PROCESS OF MINING TRANSACTION

February 20, 2017
SME Annual Conference
Denver, CO

RAMBOLL ENVIRON

A mine is a hole in the ground. The discoverer of it is a natural liar. The hole in the ground and the liar combine and issue shares and trap fools. — Detroit Free Press-1881.

In 1901 a California journal called the "Overland Monthly" printed a variant that excoriated prospectors:

A PROSPECTOR has been defined as "a man who owns a hole in the ground and is the biggest liar in thirteen counties,"…

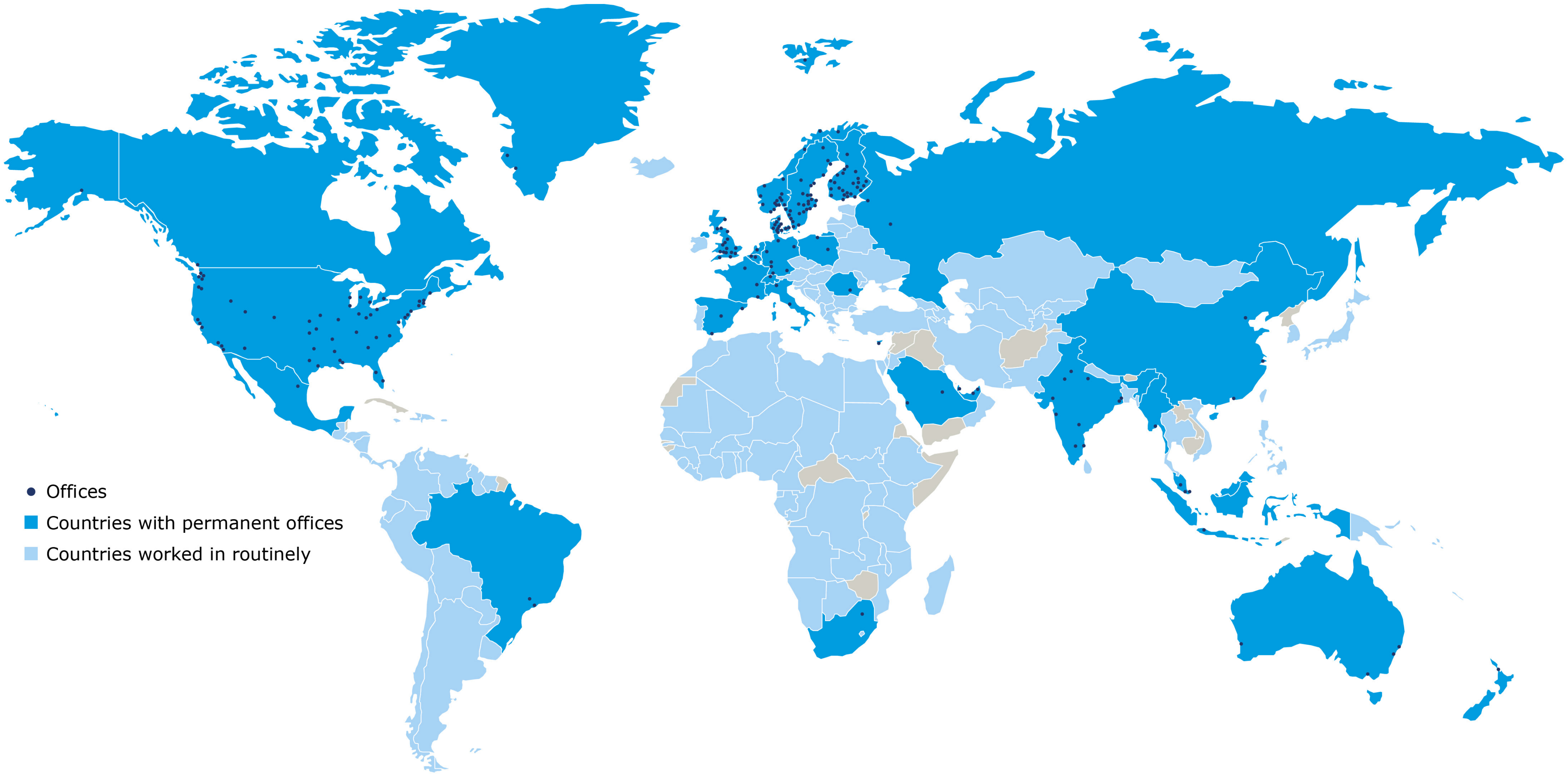
OVERVIEW

1. Introductions
2. Company Summary
3. The Due Diligence Process
4. Financial or Other Non-Technical Aspects in Due Diligence
5. Social Risk Assessment
6. Climate Change

COMPANY SUMMARY

- Ramboll founded in **Denmark** in 1945
- Acquired Environ in 2014
- Over **13,000** consulting engineers, scientists, designers and management consultants committed to creating sustainable and long-term solutions for our customers and society
- Over **300** offices around the world

GLOBAL PRESENCE AND EXPERIENCE



RAMBOLL ENVIRON

DUE DILIGENCE PROCESS

RAMBOLL ENVIRON

ASK YOURSELF-WHY IS THIS ASSET BEING SOLD ?

Is there something you are missing? Does it sound too good to be true? A natural curiosity and significant research is often required to uncover potential hidden motives for disposing an asset.

The Scope of a "typical" Due Diligence

Financial Aspects

- nature of orebody
- business model
- tax regime

Miscellaneous Aspects

- country risk
- political risk (including government shareholding)
- legal risk (e.g. security of tenure)
- reputational risk

Environmental Aspects

- non-compliance with legislation, permits or conditions of finance
- inadequate provision for closure
- use of processes, technologies or chemicals that have unacceptable impacts on environment

Social Aspects

- pending land/ compensation claims
- antagonistic relations with stakeholders (local communities, government, NGOs)
- need for involuntary resettlement
- relationships with artisanal/small scale miners

RAMBOLL ENVIRON BuySellMines

EXAMPLES OF ISSUES FOR MINING SECTOR

EHS

- Compliance
- Closure
- Permitting
- Safety performance
- Employee exposures
- Ecosystem impacts
- Water supply and impacts
- Management systems

CONTAMINATION

- Historical site use
- Acid rock drainage
- Tailings management
- Waste rock management
- Pit lakes
- Waste management
- Groundwater impacts

SOCIAL RISK

- Complex history between communities, prior operator, and government
- Social investments do not manage risks or contribute to local content commitments
- Site team does not have experience and capacity to manage social risks
- Impacts have not been adequately managed

OTHER TOPICS

- Regulatory developments
- Climate resiliency
- Energy
- Product stewardship

Many potentially viable mining projects are thwarted and delayed by non-technical factors such as social (nearby villages, heritage areas) or environmental (permits, approvals) issues not normally done in a typical due diligence. Is there something at this site that hasn't been adequately considered or addressed?

OTHER QUESTIONS YOU SHOULD CONSIDER DURING DUE DILIGENCE?

- Are the **liabilities** associated with pre-existing contamination? Who will be responsible?
- What are the **licensing** (permitting) risks to future expansion?
- Are there implications of **social risk?**
- Is the company complying with current environmental **regulatory requirements**?
- Are there **future emerging** environmental or government regulations that may apply? Is the company prepared to meet these requirements? How much will it cost?
- What resources will the company have to manage EHS or social issues **post-acquisition**?
- Are we just establishing baseline conditions or should we be doing a high level "**red flag**" review?
- What are the **closure liabilities** and the effect to surrounding communities?
- **Many others…**

RAMBOLL ENVIRON

NON-TECHNICAL ISSUES TO ADDRESS IN DUE DILIGENCE

- **Public image** of the operator and local community acceptance or attitude toward the operation or facility
- **Social risk evaluations** based on operational context and capacity building for addressing social risks
- Social risk/reputational **legacy issues**
- Management's concern and approach to **environmental compliance** and **health and safety**
- The **relationship of the operator** with other various stakeholders, including regulatory agencies, the local community, political leaders, employees, and lenders
- **Sustainability issues**-stakeholder engagement and overall performance
- The affect of **public perception** of the mine operator on stock valuation
- Approach to **emerging issues**-regulatory, international and climate change

CHECKLIST OF NONTECHNICAL CONSIDERATIONS IN MINING OPERATIONS

- Assess **social** and community impacts through online resources.
- Assess local **community** support and acceptance.
- Assess **public image** and perception of mine operator.
- Assess relationship of mine operator with **stakeholders.**
- Determine **management view** and approach to EH&S programs.
- Lastly, evaluate any potential **risk transfer** through insurance instruments.

RECENT MINING SECTOR DUE DILIGENCE PROJECTS

Blackstone: Bowie Resource Partners

Ramboll Environ assisted a Private Equity client in the acquisition of Bowie Resource Partners and Peabody Energy, which operate coal mines and support facilities in Colorado, Utah and New Mexico.

The review occurred shortly after OSMRE had issued its proposed Stream Protection Rule. On behalf of the National Mining Association, Ramboll Environ completed an analysis of the economic impact of the SPR on the coal mining industry.

Confidential Client and Company

Ramboll Environ conducted an environmental and social risk review of several diamond mines. Issues evaluated include the potential impact of climate change on the use of the winter road.

Ramboll Environ also evaluated and quantified social risks related to Indigenous peoples impacted by the project and community investment commitments associated with a new pipe extension.

FINANCIAL OR OTHER NON-TECHNICAL ASPECTS IN DUE DILIGENCE

RAMBOLL ENVIRON

SOCIAL LICENCE TO OPERATE

- The environmental and social impacts are more difficult to quantify, but may impact the company's ability to operate at the given site of interest or other locations both within the region and even worldwide (‘**social license**’).
- It is important to distinguish between compliance to meet the regulatory requirements of a country or the standards of a lender (such as the Equator Principles and IFC’s Performance Standards), and added value to achieve development impacts.
- If a company or project only aims to achieve compliance, then, particularly with respect to addressing challenging stakeholder and community engagement issues, the strategy may not be enough to earn a Social License to Operate.

SOCIAL LICENCE TO OPERATE

- The work of the UN Special Representative on Business and Human Rights, Professor John Ruggie, on the issue of human rights and transnational corporations and other enterprises, has spurred new approaches to social and stakeholder engagement issues globally.
- The "**Ruggie Report**" specifically recommends that companies/projects:
  - Undertake human rights due diligence (actual and potential human rights impacts).
  - Contribute to the development of affected communities, recognizing that projects can only be successful if they enjoy broad local support.

INTERNATIONAL CRITERIA OR OTHER FINANCIAL ASPECTS

The nature of the environmental and social analysis for a given project depends largely on the financial institution requesting the assessment. **What should you do?**

- Carry out an independent ESHS audit of existing operations to identify any gaps with IFC's Performance Standards and local country EHS Guidelines.
- Determine if a Stakeholder Engagement Plan and a Grievance Mechanism and Procedure are in place to identify/map key stakeholders that engage and communicate with the affected community and stakeholders in a frequent and effective manner.
- Review any qualitative and quantitative human health risk assessments or community exposure studies.
- Develop a Transportation Management Plan (TMP) to identify and manage and monitor risks for travel related issues to a potential project and train personnel prior to any site visit.

SOCIAL RISK ASSESSMENT

RAMBOLL ENVIRON

SOCIAL RISKS FOR M&A

Companies inherit **SOCIAL BALANCE SHEETS** through mergers and acquisitions (M&A)

LIABILITIES

- Operational disruptions/labour disputes/work stoppage/ permitting delays
- Unmanaged impacts
- Unmanaged expectations
- Inter-community conflict
- Employee and contractor behavior adversely impacting community safety
- Unmet commitments
- Undocumented social obligations and grievances
- Negative behavior of prior operators in the region
- Health impacts from company activities

ASSETS

- Company has management systems and competencies to proactively manage social risks vs. PR approach to community relations
- Company documents and addresses commitments and disputes
- Company is meeting commitments to local content and meaningful community investments
- Impacts are understood and being addressed
- History of managing social incidents with accountability, timely response, and systems in place to minimize risk of repeat incidents
- Stakeholder mapping and proactive engagement planning is current and kept up-to-date annually

PRINCIPLES FOR SOCIAL DUE DILIGENCE

1. Understand operational context and issues that are over still **influencing operational stability**.
2. Assess company's **capacity** to manage social risks.
   - Systems, skills and resources at the corporate and site levels
3. Evaluate response to social incidents based on **accountability, remedy and systems** in place to reduce or eliminate the risks of repeat incidents.
   - Unique and **isolated situations** or the result of **systematic failures** that are representative of a company's overall ability to manage its risks?
4. Look for evidence of **unmanaged impacts.**
   - Is the company managing impacts and risks or focusing on superficial public relations activities?
   - Develop an overall social risk profile of the project.

MANAGING SOCIAL BALANCE SHEET

- Resource development projects will likely have **several owners** throughout exploration, permitting, construction, operation and closure
- Communities remain relatively **consistent**
- Post-transaction
  - Assess efficacy of social risk management **infrastructure** (e.g., policies, management systems, audit programs, accountabilities…etc.)
  - Adequately resource at the site level to ensure community relations teams are able to spend time with stakeholders to understand **legacy issues**
  - Address disputes and commitments which have been **inherited**

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) OPEN PIT/UNDERGROUND GOLD MINE, GUYANA

- Ramboll prepared an ESIA meeting IFC Performance Standards and applicable IFC EHS Guidelines
- ESIA encompassed mine operations, ore processing facilities using cyanide-leaching technology, airstrip, river ferry, man-camp facilities, power generation facilities, river port and logistics facility, and access roads joining the port facility to a river ferry and the mine site. The assessment concluded the following:
  - Supplemental biodiversity and power generation trade-off studies; a surface/ groundwater modelling study to examine the predicted efficiencies of the tailings management facility and mine water pond in mitigation of potential environmental impacts.
  - Development of a comprehensive Environmental, Social, and Health and Safety Management System (ESHSMS), including overarching policies and management systems plans, 15 management and mitigation plans, and 60 standard operating procedures.

CLIMATE CHANGE

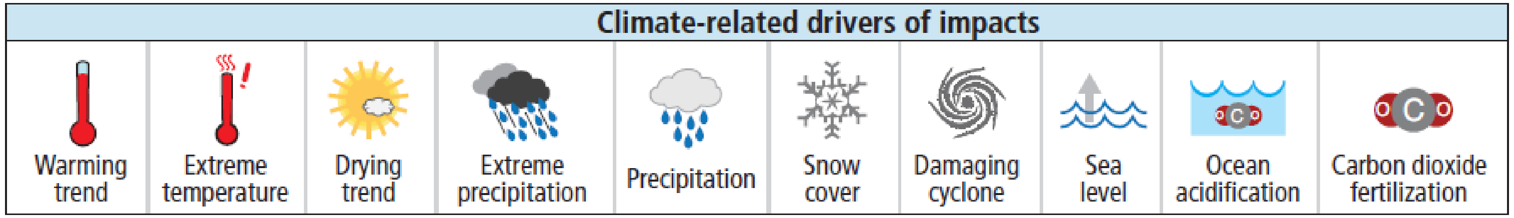
RAMBOLL ENVIRON

THE CARBON DISCLOSURE PROJECT

The Carbon Disclosure Project groups business risks related to climate change into four main categories:

- Regulatory risks from tightening legislation (and opportunities for companies that can make the carbon market a benefit for them), e.g. rising costs for carbon and energy-intensive processes like the copper and other extractive processes.
- Competitive risks & opportunities generated by a possible decline in customer demand for carbon/energy intensive products (and opportunities from a consequent rise in demand for efficient / low carbon products)
- Reputational risks from perceived inaction on climate change (and benefits to those perceived to be 'solutions providers')
- Physical risks from changes to climatic patterns, e.g. asset damage from extreme weather events; project delays; water scarcity; resource risks as certain crops become no longer viable in certain areas and new supply chains become necessary; and potential human and socio-political impacts.

PHYSICAL IMPACTS OF CLIMATE CHANGE: MINING



Risks and Vulnerabilities

- Heavy rains can exceed capacity of underground pumping systems, compromise surface impoundments, cause erosion, landslides, subsidence
- Droughts reduce water available for operations and increase possibility of acid rock discharge through compromise of water cover for tailings and waste rock
- Melting permafrost can affect stability of tailing ponds, dams, roadways
- Supply chain disruptions due to extreme weather
- Changing climate can affect river flows and hydroelectric generation, gas generation through effects on cooling water availability
- Episodes of extreme heat affect worker safety, require additional cooling above and below ground
- Long-lived infrastructure/assets designed for present climate
- Depend on availability of resources (water, energy) vulnerable to climate change
- Climate change impacts may increase costs of closure bonds
- Often in remote locations vulnerable to disruption
- Global supply chains
- Local communities may be adversely affected by climate change with implications for work force and social license to operate
- Cost of water pre- and post-treatment may increase

Opportunities

- Climate change may render new reserves accessible for development
- Melting Arctic ice may open new sea lanes
- Milder temperatures mean less heating required for Arctic operations

IN CONCLUSION… ONE SHOULD DO…

- ❑ An evaluation of the thoroughness and quality of available environmentally and socially related documentation, including appropriateness of methodology used and summary interpretations in baseline reports.
- ❑ An investigation of any legacy contamination from past mining practices
- ❑ An evaluation of the comprehensiveness and suitability of any baseline data in determining environmental and social impacts.
- ❑ An appraisal of the potential for the project to give rise to adverse community or regional reaction.
- ❑ An appraisal of the appropriateness and reasonability of closure/reclamation planning and costs.
- ❑ An appraisal of the appropriateness and reasonability of the project's environmental management system, EH&S and monitoring plans, and environmental and community relations staffing.
- ❑ A high level opinion of the project's alignment with identified international standards and impacts from potential climate change evaluations.

THANK YOU

SME – A Financial Advisor's View of Raising Capital for Mining Ventures Today

February 2017

Rick Reeves
Managing Director
Northcott Capital

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Economic Overview

SECTION 1

Commodity Prices

Commodity prices remain near lows, but are showing signs of support (source: InfoMine, Mundi, Quandl and Metal Bulletin)

	Current	% Change from Last Year
• Precious metal prices		
• Au	$1,234/oz.	+ 2.0%
• Ag	$17.95/oz.	+ 18%
• Non-ferrous base metal prices		
• Cu	$2.66/lb.	+ 27%
• Zn	$1.30/lb.	+ 65%
• Al	$0.83/lb.	+ 19%
• Ni	$4.71/lb.	+ 22%
• Steel and steelmaking commodity prices:		
• Hot Rolled Coil (“HRC”) US	$620/tonne	+ 56%
• Fe Ore	$87.00/tonne	+ 85%
• Coking Coal	$122/tonne	+ 65%
• Energy commodities		
• Brent crude	$56.46/bbl.	+ 71%
• Natural gas (US)	$3.05/MBtu	+ 69 %
• Seaborne thermal coal	$90/tonne	+ 67%

Commodity Prices

What a Difference a Year Makes

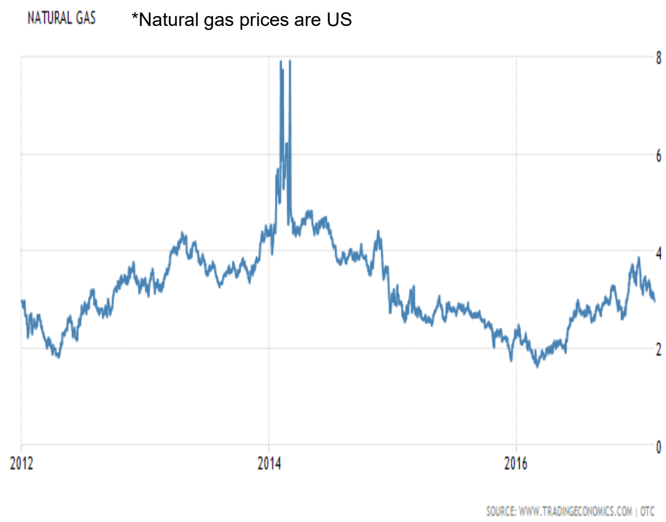
- As shown on the foregoing page, all mineral commodities are showing signs of recovery, the investment question is: Will it last?
- Is the supply overhang disappearing long term?
- Depending on the forecast, some commodities may extend their supply deficits while other forecasts show surpluses

Perhaps we are recovering from the bottom of the cycle

- Although the past is not a definitive prediction of the future, commodity price trends appear to show we have gone through the bottom

Commodity Prices – Base Metals

Commodity Prices – Energy* and Iron Ore



Commodity Demand

Precious Metals

- The key driver of precious metals prices is expectations with respect to the US Dollar
- Gold and to a lesser extent silver are the currencies that governments have the most difficulty artificially valuing
- That said, despite some pundits saying that President Trump's economic policies may be inflationary, the price of gold and silver in US Dollars has remained relatively constant over the last year
- As always silver is showing its split personality:
  - During high gold prices, silver moves with gold
  - During lower gold prices, silver prices more according to its economic and industrial use
  - Over the last 5 years, silver appears to be acting as a gold surrogate

Base Metals

- The four base metals charted are showing a definite trend, which could indicate expectations for continued economic growth and recovery
- It appears we hit a cyclical low in early 2016, and we have seen slow and steady improvement since then

Commodity Demand

Energy and Iron Ore

- Similar to base metals, energy has also shown a steady climb from its lows in early 2016
- Even coal, despite the efforts by various segments of society and certain politicians to kill the industry, is seeing gradual increase in demand and pricing, particularly in the international markets
- The exception is US coal, which has only shown a minor recovery due to intense competition from US natural gas production
- Iron ore is showing the same trend as base metals:
  - Although not charted, other steel based commodities are showing a similar trend as iron ore

Overall Demand Factors

- The US economy continues to recover, and it has a strong possibility of showing more growth in those areas that consume commodities:
  - Regulatory relief may occur, which is always good for commodity producing and consuming industries
  - Increased infrastructure projects and buildup of military hardware, particularly a naval build up
  - Increased production of capital equipment and autos
  - Less emphasis carbon regulation
- However, the US economy has certain features providing structural drag:
  - Substantial government debt overhang
  - Increased social net and mandated minimum wages

Supply Side Issues

Nameplate Capacity in Production and Care and Maintenance Exceeds Demand

- Industry capacity increased during the so called “supercycle” resulting in ongoing excess capacity
- Major mining companies remain focused on repairing balance sheets:
  - Still suffering from over paying for acquisition activity
  - Excessive capital expenditures during the “supercycle”
  - Focused on reducing costs and disposing of assets, not building new capacity
- Only a few very strong greenfield projects are being built:
  - Cobre Panama
  - Gahcho Kue
  - Oyu Tolgoi (although a brownfield, the magnitude of the expansion almost makes it qualify as a greenfield)
- Much more focus on brownfield expansions by the majors:
  - Lower operating and completion risk
  - Higher return on capital expenditures
  - Less permitting uncertainty
- The majors have shown prudent discipline with respect to production supporting a solid supply response to the declining markets, which has contributed to the recovery that we are beginning to see in the commodity markets

Current Project Finance Trends

SECTION 2

What Are the Financing Paradigms Now?

Excess Capacity Still Limits New Mine Development by the Majors

- Main focus is on controlling operating costs to make money in this environment

Major Miners are Financing at Multiple Levels to Increase Capital Availability

- Often major mining companies have avoided Project Financing due to higher complexity and costs, coupled with reduced flexibility
- In some cases, a company may be able to raise more debt if it both optimizes debt at the parent and the asset level on a non recourse basis
- Non traditional investors like pension funds and private equity are looking at more streaming deals
- More investment funds are looking at debt as well equity

Banks Are Still Very Circumspect with Respect to Project Financing

- Bank credit committees remain very pessimistic regarding commodity prices:
    - Banks tend to base average price assumptions and downsides on past prices, which have been very low over the last few years
- Often banks are only willing to lend to their relationship customers in this environment

Project Financing Opportunities for the Majors

Joint Ventures

- Have always lent themselves to Project Financing as this allows an equitable distribution of risk amongst the joint venture partners

Possible Additional Debt at Operating Companies to Fund Corporate Activities

- Assets being financed are mature project assets, minimizing development and completion risk
- Project financing may or may not be for an expansion
- Due to asset based risk, most of the market will treat this as project financing, while the actual deals have a very corporate like structure compared to project financing

Brownfield Expansions

- More activity in expansion of existing operations as major mining companies look to expand the lowest cost properties while cutting back higher cost operations

Risk Mitigation for Very Attractive Greenfield Developments

- A traditional use of project finance for those few projects the majors are developing in this market

Where Does this Leave Junior Miners?

Junior Miner's Traditional Business Model Has Been Interrupted

- Unless a project is extremely compelling, the majors are not yet looking to buy development stage projects, which is forcing the juniors to seek alternative ways of monetizing development assets other than selling projects to the majors:
  - Many juniors are still delaying projects and simply trying to hold on
  - In this market for a junior to develop a greenfield project, the project must be compelling and everything needs to go right
  - The economic value extracted by non-traditional partners and funds may exceed the cost of waiting out the downturn

Evaluating Trade Offs is Vital and Must be Timely

- It is important to make decisions while the junior's cash position is reasonably good to avoid acting in desperation
- Junior miners must continue to be realistic about project value and likelihood of attracting investors at its current stage of development

Where Does this Leave Junior Miners?

Care and Maintenance for Developing Projects – Can make sense for many juniors

- Pursuing mine development in a down market can quickly drain a junior miner's capital base
- The uncertainty about timing of improved markets and appetite of debt and equity investors may mean that continuing to maintain a project on hold is the best "risk trade"

Continued Project Development

- Developing mining assets requires a different management approach and skill set than exploration and disposition

This Current Upturn in the Market May Be a Turning Point

- If so, it is reasonable to expect the market to return to more traditional behavior and additional opportunities for junior miners to monetize their assets

Impact on the Current Mining Project Finance Market

Limited number of deals getting done

- Makes the loan market more difficult and opaque with respect to structure and pricing
- Deal syndication is more difficult, as it is less clear which banks are actually in the market:
  - Banks are picking and choosing which commodities they are willing to finance
  - It will be interesting to see if banks that have publicly disavowed certain commodities will walk back those stances if profit opportunities are available
- Bank rationale for accepting or not accepting certain transactions is less consistent, in part due to limited opportunities:
  - Existing relationships
  - Commodity preferences of individual banks
  - Opportunistic risk taking for outsized returns

Completion risk is front and center

- Deals with reduced completion risk are more prevalent:
  - Expansion of existing mines
  - Acquisition of operating mines
- Most of the deals that were closed in the last year had strong companies acting as: sponsors, limited or full guarantors, off-takers, operators or a combination of the foregoing:
  - Source of overrun funding even if not promised prior to deal closing
  - Depth of staff, resources and expertise to address issues if and when they arise

Current Mining Project Finance Market (cont.)

Concern that Commodity Prices May Retreat Again Drives Credit Market Risk Appetite

- Although the analysis may be difficult to defend, banks will generally run downside analyses from current prices, and from recent low prices, which are based on recent cyclical low activity
- Banks are still concerned about at commodity risk on a portfolio basis in light of recent commodity prices, despite the apparent beginnings of a recovery

Brownfield Expansions Can Be Easier to Finance than Greenfield Projects

- With strong focus on price and revenue risks, brownfield expansions allow other risk categories to be mitigated, including:
  - Reserve and resource risks are generally better known due to enhanced knowledge of the ore body from mining and drilling from inside the mine
  - Permitting and social risks are generally less in a brownfield expansion because the local population and authorities are already living with, have accepted and are benefitting from, the project
  - Construction risk is considered to be less because the operator has already lived with these issues and established solutions to likely problems
  - Mining and processing risk is lower due to knowledge of the orebody and processing nuances
- **Brownfield expansions allow lenders to focus on commodity market risk and reduce the number of combination downsides considered by lenders**

Mining Project Finance Market – Outlook

Lender risk appetite will largely be driven by commodity price trends

- The best outcome is for prices to continue to stabilize and over time increase gradually, ***which appears to be occurring:***
  - Albeit at a lower level (than before prices contracted), the new expectation would be perceived as predictable
  - It would eliminate lender fears of continued decreases over time
  - Allows the perception of support around a bottom price having been reached and then left behind
  - **It allows the industry and its investors to conform to the new normal and go forward with business on a normalized basis**
- A rapid increase in commodity prices could be viewed as a bubble until the increased prices became "seasoned":
  - It would likely take longer to be accepted by lenders as a new market paradigm
- Another possibility is for prices to start decreasing again:
  - More and more lenders will find this difficult
  - It will cause lenders to question where the bottom is, and to look at ever more pessimistic scenarios

Selected Case Studies

SECTION 3

NTEC: A Coal Acquisition Financing

Transaction Case Study - $115MM Senior Secured Credit Facility

Company Overview

Navajo Transitional Energy Company

- **Sponsors**: Navajo Transitional Energy Company ("NTEC")
- **Asset Description**: The Navajo Mine, a large open pit coal mine that is the sole supplier of coal to the Four Corners Power Plant in Northwestern New Mexico

Selected Transaction Terms

Borrower	**Navajo Transitional Energy Company**
Facility	$95 million Term Loan Facility $20 million Revolving Credit Facility
Parent Guarantee	None
Ranking	Senior Secured
Closing	August 2016

Lead Banks

- KeyBank Capital Markets acted as Coordinating Lead Arranger (and Mandated Lead Arranger) and Administrative Agent
- Sumitomo Mitsui Bank Corporation ("SMBC") and Caterpillar Financial Services Corporation were additional Mandated Lead Arrangers

Transaction Synopsis

- $115 million senior secured financing; it includes a $95 million term loan and a $20 million revolving credit facility
- The transaction allowed NTEC to fully repay its original acquisition financing of the Navajo Mine in the form of a Promissory Note from BHP, and to have funds for working capital and general corporate purposes

Transaction Highlights

An Acquisition Financing:

- Although technically used to repay the Promissory Note from BHP, the BHP financing was always intended to be a temporary measure to facilitate closing the acquisition until permanent financing could be obtained
- It enabled NTEC to normalize its relationship with the seller of the Navajo Mine (BHP), its customer (the Four Corners Power Plant) and transition to a new contract mine operator North American Coal Company

Strong Coal Sales Position:

- Contracted sales of all coal production through 2031 with investment grade utility counter-parties

No Completion and Limited Transition Risk:

- The mine has been operating since 1963
- North American Coal Company is a premier surface mining contractor

Minera Centinela: Copper Mining Transaction

Transaction Case Study - $900MM Senior Unsecured Credit Facility

Company Overview

CENTINELA ANTOFAGASTA MINERALS · ANTOFAGASTA PLC · Marubeni

- **Sponsors**: Antofagasta and Marubeni
- **Asset Description**: Large operating copper mines – including Minera Esperanza and El Tesoro - located in the Antofagasta region in northern Chile. Construction was initiated in mid-2008, and start-up of commercial operation took place in January 2011. Financial Completion was achieved in August 2013

Selected Transaction Terms

Borrower	**Minera Centinela, a *sociedad minera* organized under the laws of Republic of Chile**
Facility	$900MM Term Loan Facility
Tenor	5 years
Purpose	Capital expenditures and general corporate purposes, including working capital
Ranking	Senior Unsecured
Syndication Closing	September 2015

Lead Banks

- MUFG acted as Mandated Lead Arranger, Joint Bookrunner and Administrative Agent
- MUFG serves as the Administrative Agent, Mandated Lead Arranger and Joint Bookrunner, leading the transaction on behalf of the senior financing group

Transaction Synopsis

- $900 million senior unsecured financing; the transaction extended the maturity of the loan by 2 years, and restructured the amortization profile
- The transaction provides the Borrower with additional flexibility to expand Centinela's oxide deposit

Transaction Highlights

Significant Latin American transaction:

- The $900 million refinancing for Minera Centinela's copper mining assets is one of the largest recent mining transactions in South America
- Minera Esperanza is one of the largest copper mines in South America, with a long expected mine life in excess of 40 years
- The unsecured transaction refinanced the original senior secured project financing, in addition to providing additional funding for capital expenditures and general corporate purposes

Strong Sponsorship:

- Antofagasta is a leading Chilean mining company operating large copper mines in Chile, including Los Pelambres, Esperanza, El Tesoro, and Michilla
- Marubeni is a Japanese trading company founded in 1858

Biography and Contact Information

APPENDIX I

Biography

Rick Reeves, Managing Director ***Northcott Capital*** Phone: (303) 694-1550 Email: richard.reeves@northcottcapital.com	Rick joined Northcott Capital in November 2016 bringing 32 years of experience in the natural resource sector, of which 22 years were in banking/investment banking and advisory together with 10 years of experience in mine management and engineering. Before joining Northcott Capital, Rick led MUFG Union Bank's mining project finance business in North and South America. Prior to his ten years at MUFG Union Bank, Rick worked as an investment banker for Deutsche Bank and Barclays BZW, and as an independent consultant. Rick's experience includes: marketing, structuring and executing mineral finance transactions; mineral finance advisory; mine and mineral property valuation; and mine feasibility and independent consulting on mine and mineral development projects in transactions that include: the privatization of British Coal, the privatization of Siderurgica del Orinoco in Venezuela, project financing of the Antamina copper/zinc mine in Peru, the financings that supported much of the consolidation of the US coal industry in 2011, and the recent financings on behalf of Antofagasta Minerals in Chile. Rick has a B.Sc. in Mining Engineering from the Colorado School of Mines and a M.B.A. from the University of Chicago. He is a registered Professional Engineer in the State of Colorado, and holds Mine Manager/Foreman and Shotfirer certification in the States of Colorado and Illinois.

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