

: Mining and Metals

INTRODUCTION:

There is a growing movement among companies in the mining and metals industry to measure company activities against the standard of social and environmental responsibility. From the potential for pollution in mine operations, to the problem of “conflict diamonds” sold to fund military action, to the need for responsible mine closure strategies, the environmental and social challenges to which mining and metals companies must respond are many.

These challenges are some of the most difficult faced by any industrial sector and are recognized as fundamental business challenges. It is essential that mining and metals companies act as careful stewards of natural resources. A key challenge for the mining and metals industry is the need for companies to demonstrate the socio-economic benefits of their presence to the communities in which they operate.

The International Council on Mining and Metals (ICMM), a CEO-led industry group, is taking the lead in helping companies to address these and other challenges by offering guidelines for constructive engagement developed by its member companies in concert with donor agencies, expert NGOs, intergovernmental organizations and others in an array of relevant issue areas. ICMM operates on a basis of openness and transparency and welcomes queries on its work from the academic community. ICMM was created as the result of a multi-stakeholder dialogue process undertaken in the late 1990s by a small group of companies to look at how the mining and metals industry could contribute to more sustainable patterns of development. The resulting report, [Mining, Minerals, and Sustainable Development](#) (MMSD), was produced in 2002 and provides a comprehensive overview of the challenges faced by the industry. ICMM’s work program is based on a set of ten sustainable development principles which are drawn from the MMSD report.

What lessons can the dual demand for sensitivity and innovation facing the mining and metals industry teach MBA students, the majority of whom who will not enter that industry? While most MBA programs do not offer courses devoted entirely to content on mining and metals, many courses draw on lessons from the industry in teaching larger lessons. In some cases classroom discussion or assigned reading about a mining and metals company may use that company primarily as an example of a well-established company, a company in a process industry, or a company with a long-term business strategy. However, companies from the mining and metals industry are also used as powerful examples of both product and process innovation, and of constructive engagement with environmental and social challenges.¹

THE BOTTOM LINE:

- The mining and metals industry has many important lessons to offer MBA students about the ways that product and process innovations can produce far-reaching positive effects.
- Leading mining and metals companies are taking a proactive, collaborative approach to social responsibility and incorporating the pursuit of greater social and environmental responsibility throughout the entire business model.

¹ Thanks to Mark Finster of the School of Business at the University of Wisconsin-Madison, John Lott of the Kenan-Flagler Business School at the University of North Carolina-Chapel Hill, and Jack Meredith of the Babcock Graduate School of Management at Wake Forest University for taking the time to discuss their thoughts about teaching on mining and metals, and the lessons MBA students can learn from the industry’s challenges and opportunities.

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A FACULTY POINT OF VIEW:

[Hau L. Lee](#) is Thoma Professor of Operations, Information, and Technology at the Stanford University Graduate School of Business. He is also Director of the Strategies and Leadership in Supply Chains Executive Program and Director of the Stanford Global Supply Chain Management Forum. His course “Global Operations” includes content on mining and metals, as will a new course on environmental impacts which he will teach beginning this fall.

On teaching about mining and metals: “In ‘Global Operations,’ mining and metals is more than just an example of a process industry. It’s important for students to dive in and really understand the background: company process, operations, logistics, HR issues, etc. It’s very natural that environmental impacts come up, and cases often cover what companies are doing in the environmental and CSR areas. I ask my students to look critically at those activities, and discuss whether or why a particular approach makes sense, and whether it will ultimately change industry practice.”

On innovation in the mining and metals industry: “When in-class guest speakers from Rio Tinto and Cemex describe their approach to differentiating themselves from competitors they say ‘What can I do so that my customers are better off?’ In that industry what differentiates one company from another is how the product is used downstream—for example, a steel company would look at a car company to find ideas about how to use the material with less waste, or less energy consumed. Companies look at how the product can be used downstream with greater cost efficiency, and with fewer negatives, which benefit customers across the board. The more companies in all industries look at results downstream, the more this will generate better results for consumers and society.”

On opportunities in mining and metals: “Since I’ve introduced mining and metals content into my course, I’ve found a real change. Very few of my students come in to the course with interest in or knowledge of traditional industries, but by the end, many have gained the understanding that in that industry you can do really innovative things and make a big difference. In particular after internships at Cemex and Rio Tinto, their eyes are really opened to the possibilities for innovation and positive environmental impacts.”

AN INDUSTRY POINT OF VIEW

Ian Wood is Vice President of Sustainable Development and Community Relations at [BHP Billiton](#), a leading producer of aluminum, energy and metallurgical coal, copper, diamonds, iron ore, manganese, petroleum, stainless steel and zinc. BHP Billiton is a member of the International Council on Mining and Metals (ICMM), a CEO-led industry group dedicated to promoting responsible mineral and metal production.

On incorporating sustainability throughout the entire business: “It’s really a mainstream part of running our business...it’s a core mine management responsibility—this includes environmental and social regulatory requirements, as well as community expectations.”

On key social responsibility lessons from the mining and metals industry: “Even what seems like a small issue can have a real impact on a corporation’s reputation...Remember the importance of keeping in touch with key stakeholders, and not underestimating the significance of different issues to different people. It’s important that a company be able to work quickly toward a resolution of issues so that people don’t feel they need to get an external party involved to get resolution.”

On being pro-active stewards: “As an industry we need to understand when we buy or inherit a project through an acquisition that as well as acquiring the assets of the project, we may also

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inherit community grievances about past environmental or social performance. You have to acknowledge those issues and work with the community to deal with them responsibly.”



NOTABLE COURSEWORK:

The following course descriptions are drawn exclusively from the 2007-2008 edition of [Beyond Grey Pinstripes](#), a research survey conducted biennially by the Center for Business Education at the Aspen Institute.

- **University of North Carolina-Chapel Hill, Kenan-Flagler Business School**
[Product Stewardship and Sustainability](#) (Elective Course)

Instructor: John Lott

“Product stewardship is the management of health, safety, and environmental issues at every phase of a product’s lifecycle (production, sale, use, and disposal). This course covers various elements related to the current and growing issues associated with "product stewardship." These elements impact product salability, product risk, competitive advantage, and sustainable growth of a firm. Topics include environmental/product management systems, product stewardship review elements, product safety and regulations (including in specific areas such as green building, biotech, nanotech, agriculture, etc.), risk management, and opportunities for sustainable growth and competitive advantage through product stewardship, among others.”

- **University of Wisconsin-Madison, School of Business**
[Strategic Breakthrough Planning](#) (Elective Course)

Instructor: Mark Finster

“This course examines breakthrough systems used by leading organizations to strategically change the organization's vision, values, strategy and operations to improve the triple bottom line. A fundamental application that weaves throughout the course stems from the dramatic changes occurring in the world's natural systems, including climate, energy, water, biodiversity, chemicals (e.g., toxic & heavy metals), air pollution, waste management, ozone layer depletion and deforestation. These changes in the natural world create both business risk and business opportunity driven by social, political, economic and market pressures to become sustainable. Sustainability insights, such as those provided by the Natural Step, by footprint analysis and by other eco-indicators, create strategic insights that reveal business risks & opportunities that are not visible without the sustainability lens. (The course) describes the development of organizational response systems that strategically assess risks and opportunities that occur in the global environment, and then deploy those insights into changes for the whole organization, including its supply and customer chains. Cases and examples around sustainability are provided for strategic deployment of mission, values, principles, objectives, strategies, tactics and action plans. The course involves a practicum where groups of students work on strategic breakthrough in local organizations throughout the semester.”

- **Dalhousie University, Faculty of Management**
[Management of Resources and the Environment](#) (Elective Course)

Instructor: Peter Duinker

“This course aims to help students understand key management concepts as applied to natural resources and the environment. Topics include management paradigms, systems, principles, approaches, tools and institutions as developed and applied in a wide range of resource and environmental sectors, including fisheries, forestry, wildlife, water, agriculture, minerals, energy, coastal zone, protected areas, waste, industrial parks, land use. Case studies will complement lectures, seminars, group discussions and field trips.”

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- **Curtin University of Technology, Curtin Business School**

[Risk and Safety Management](#) (Core Course)

Instructor: Jim Winter

“Risk and safety management focuses heavily on public policy for reducing risk and enhancing business safety. This course is very relevant to the mining and resources industry, and has a strong component around reducing risk by reducing the environmental impact of resource activities. In addition, occupational health and safety is covered in a responsible manner.”

For additional courses on related subjects, or to download select syllabi, search thousands of descriptions at [Beyond Grey Pinstripes](#).



NOTABLE TEACHING MATERIALS:

Materials referenced are meant to represent the diversity of related teaching resources available at Caseplace.org. Most are available as free downloads to registered faculty members.

- **Case Study:** [Cameco in Kyrgystan: Corporate Social Responsibility Abroad](#)

Source: Richard Ivey School of Business

Based in Saskatoon, Canada, Cameco was the world's largest uranium mining company. It had developed its policy for corporate social responsibility in northern Saskatchewan where it had its major mining operations and where there were a large indigenous population of Cree and Dene Indians. The issue centers on whether the same corporate social responsibility policy can be applied to the company's joint venture with the Kyrgyzstan government to operate a gold mine in eastern Kyrgyzstan.

- **Case Study:** [DeBeers: Addressing the New Competitiveness Challenges](#)

Source: Harvard Business School Publishing

In this case, De Beers faces critical choices about both its economic and social policies and how they interrelate. The teaching purpose is to examine how firms create prosperity, how firms are responsible for social problems, and what they should do in the locations in which they operate.

- **Magazine Article:** [Freeport's Hard Look at Itself](#)

Source: BusinessWeek

Details the efforts of Freeport McMoran—a copper and gold mining company that was previously linked to human rights abuses in the companies where it operates—to inventory and correct its past mistakes. “The company's willingness to open up so wide is a major development in the corporate responsibility movement...Freeport's audit by the ICCA, based at the City University of New York (CUNY), shows how companies that are willing can open up even in the most challenging environments.”

- **NGO Resource Paper:** [Materials Stewardship: Eco-Efficiency and Product Policy](#)

Source: International Council on Mining & Metals (ICMM)

This paper explores the relationships between materials stewardship, eco-efficiency, and the product policies of government as relevant to the industrial strategies and policies used in the mining and metals industry. Also relevant is ICMM's related guidance document on implementing materials stewardship in the mining and metals value chain entitled [“Maximizing Value”](#).

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- **NGO Resource Paper:** [Sustainable Development in the Mining and Metals Sector: The Case for Partnership at the Local, National and Global Levels](#)

Source: International Council on Mining and Metals

This essay, which won the Bronze Medal in the latest International Finance Corporation/*Financial Times* Essay Contest, examines the development role of mining which along with oil and gas is one of few significant investors in the world's poorest countries, which are often overlooked by other business sectors. The essay provides an overview of ICMM's Resource Endowment initiative, a four-year collaborative global project to enhance mining's socio-economic development based on studies in Ghana, Tanzania, Chile and Peru. A large number of materials have emerged from the initiative and these are available via ICMM's website.

ONGOING QUESTIONS:

- How can industry-wide collaboration to address common problems help to bolster each company's ability to manage those problems individually?
- What lessons can the mining and metals industry's history of engaging with governments and local communities teach students about positive and proactive stakeholder engagement?
- How can innovations in the mining and metals industry that result in greater business and environmental sustainability inspire MBAs to generate similar innovations in other industries?

RESOURCES:

[BeyondGreyPinstripes.org](#) – World's biggest MBA database, including detailed records on thousands of courses and information on extracurriculars, university centers, and more, for 128 schools on six continents.

[CasePlace.org](#) – A free and practical on-line resource for up-to-date case studies, syllabi, and innovative teaching materials on business and sustainability. Created for the educators who will shape our next generation of business leaders!

A Closer Look is a regular series of briefing papers on topical issues in MBA education, based on the research and programs of the Aspen Institute. The Aspen Institute's [Center for Business Education](#) encourages future business leaders to innovate at the intersection of corporate profits and social impacts.

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