Final Report

Schulich International Case Competition 2011

Mining and Sustainability

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Introduction

Mining companies face numerous challenges when operating their businesses in today’s competitive and changing environment. Sustainability has become a critical issue that shapes the business strategy in the mining industry.

As Mr. Tye Burt, CEO of Kinross, pointed out in his opening speech at the Schulich International Case Competition (SICC)

“Mining is an activity that is not sustainable in itself, as long as it depletes natural resources and modifies substantially the environmental and economic characteristics of the sites where it operates.”

With this train of thought echoing in our minds, our team members joined this case competition together with other 15 teams from 12 different schools from Canada and the US. The main goal of SICC was to develop new solutions to sustainability issues in mining, particularly in M&A activity.

Inorganic growth (M&A) has been in the last years one of the preferred methods for growth in the industry. A recent study by Price Waterhouse Coopers established that in 2010 there were 2,693 global mining M&A deals worth $113 billion bringing the decade total to over 11,000 transactions worth close to $785 billion.

The acquisition of Placer Dome by Barrick Gold Corporation and the subsequent operational problems at its Porgera mine in Papua New Guinea were the case studies we used for analysis.

Case Competition Questions

Q1: From an M&A perspective, how should mining companies factor into their acquisition model the risks and rewards of sustainability issues?

Mining companies need to go beyond the letter of law when dealing with their daily operations. The recent revocation of Bear Creek’s operating license in the three mines it exploited in Peru, whilst complying with the established environmental regulations, clearly demonstrates that the “social license” is essential in this business.

The recent turmoil in Peru’s Cajamarca region has halted the operations of the gold mining site that Newmont was about to open. An alleged pollution of a reservoir caused by the nearby mining site is in the root of this violent uprising.

The concept of “social license” refers to the set of attitudes and feelings of native population and other stakeholders (NGOs, Press, Governments, etc.) in connection to a mining operating site. Vandalism, protests, roadblocks, etc. are all elements that may indicate a “failing social license,” caused by a lack of proper community management of a mining company. Thus, this “social license” concept is a reference point that will serve as common thread throughout this report.

M&A is multi-stepped process. In brief, it follows this structure:

Figure I: Four steps of an M&A process

Source: Sustainable Solutions Team


The M&A Strategy Development phase is an overarching stage that determines the future of the M&A process (and of the acquiring company) in itself. Different mining companies may have different M&A strategies (resource-focused, geographic-focused, etc.) but when it comes to sustainability, the following ideas presented at the competition hinted at specific solutions that can effectively shape sustainable M&A mining practices.

a) Develop a list of “no-go” issues for your company.
Extremely sensitive issues such as civil war, unavoidable corruption or riverine/submarine tailings disposal are elements that would surely affect our mining operations, thus worsening our public image and increasing the risks of operation of our activities. Therefore, it may be necessary to set clear and succinct threshold rules that would portray these as “no-go” issues.

b) Considering all the actors interacting with the firm in both the market and the nonmarket environments is key to defining an integrated strategy
Having the company as a central-point from where strategic decisions are made, a number of other stakeholders need to be assessed when defining sustainable M&A strategies. Market environment players such as customers, suppliers and competitors are the first external level of analysis to be considered. And non-market environment stakeholders such as regulators, NGOs, governments, and society on the whole represent a second layer of external analysis that deserves further consideration.

This segment of external players has gained relevance throughout time, and it can pose real challenges to the development of business in the mining sector. As we have recently learned, it has the power to derail otherwise well-functioning mining investments.

c) Use indicators and criteria that extend beyond the traditional economic methods of measurement
Some indicators such as the economic rate of return (ERR) go beyond traditional methods of just assessing private economic returns and have a more holistic approach. Built upon the internal rate of return (IRR) of a project, the ERR includes returns to other stakeholders involved in the project, such as employees, other companies, government, community and the environment as such.

![Figure II: Calculation of ERR](image)

Source: Red Hill Team
In a similar way, the Global Reporting Initiative (GRI) indicators are a set of benchmarks and measurements of the effects and impacts of different aspects of the economic activity in the environment, society, labor practices, or human rights that can be used to better assess the sustainability of a project. The mining and metals sector released its first version of the GRI in 2010, which demonstrates the utter importance of these indicators for the industry as a whole.

d) Create a risk profile of the targeted company and quantify the risks and returns of sustainable investments

One of the solutions proposed was to create a risk matrix, where we would plot the probability of different kinds of risks, against the impact of each of these risks in our business model, being “C” the highest and riskiest and “AAA” the lowest and safest (Y-axis). The x-axis would measure the frequency/probability of these different risks.

This system would help us better assess the importance and likely impact of these risks in our organization. For instance, in the example displayed above, only one category of risk falls into the area of tolerance (highlighted in green), whilst the rest are either considered very harmful (yellow, high risk, high probability) or no-go clauses (red, very high risk, very high probability).

In case our company, despite its sustainability measures, would not be able to improve the situation and reduce the risk profile of the operations to a safer green area, we might not want to proceed with the M&A process.

In a similar way, the International Finance Corporation recently released its “sustainable investments financial valuation tool”3, which helps to better assess the returns of sustainable investments in risk-prone areas. The mining sector has been the first “object of study and potential user” of this tool, which uses statistical methods to evaluate the likeliness of risk mitigation derived from sustainable investments and to quantify its economic and financial value.

One of the suggested ways to evaluate these risks was through a ground assessment team (GAT), which would discuss potential acquisitions with key stakeholders such as local communities, governments, and NGOs. The GAT would be a multidisciplinary team (formed by miners, lawyers, consultants, etc) that leverages acquisition as an opportunity to start anew and engenders goodwill. It would move quickly “in-between the lines” in the setting of a competitive bidding process.

3 www.fvtool.com
Ideally, the GAT would engage with key stakeholders prior to bidding to set the stage for collaboration. These key stakeholders would be provided with continuous feedback in the M&A process. Later on, this feedback would help link the assessment findings to the integration process, which is the second stage of the M&A practice.

Typically, M&A activities fail mainly at two different stages, at a first stage due to an “inadequate strategic fit assessment” and at a second stage caused by “ineffective integration”. Having touched upon the more pressing and relevant issues of the first stage, we shall move on to the second topic in the next part of this paper.

Q2: Having acquired such assets, from a management perspective, how should global mining companies go about ensuring that their corporate sustainability values and policies are effectively integrated into the acquired operation?

Understanding different corporate cultures and envisioning integration prior to acquisition become fundamental issues when it comes to the effective integration of acquired companies. Well before the purchase takes place, a thorough analysis of the “to-be purchased” company is required.

The internal mechanisms of departments such as Sales/Marketing, Operations and Finance, need to be deeply evaluated. But in spite of all the relevant strategic analysis to be made, the human factor and different cultures involved are the most important and pressing issues in an M&A operation.

By engaging early on the human dimensions of the acquired company and by truly understanding the cultural differences, we can create companies with an enhanced value. From a managerial perspective it is important to develop a hands-on and fresh start approach that would swiftly tackle any unsustainable practices that could be derived from a mis-merged corporation. As depicted below:

![Figure IV: Issues & Impacts on Firm](source: Red Hill Team)
As time goes by, the firm’s likely impact on the issue decreases whilst the issue’s impact on the firm increases in an opposite direction, hence quickness is a must.

A transition management team that would lead the integration of both companies from day one is equally important. The message should be clearly delivered, establishing a clear mutual purpose and developing trust with employees.

On a second stage, and in the long run, metrics and objectives should be crafted to develop an ongoing sustainability strategy. Mechanisms such as monitoring and rewarding/disciplining leaders for adhering to sustainability values would be key to uphold the sustainability policies of the acquiring company.

In more detail, one of the solutions proposed during the case competition was to use Kotter’s model on 8-steps to successful change applied to the sustainable M&A in the mining sector.

![Figure V: Eight steps to successful change](image)

Source: Northern Advantage Team

Step 1: Establish a sense of urgency

A sense of urgency has to be developed around the need for change. Some proposed measures are:

- Identify potential threats (tailings mismanagement, development of community relations, health conditions), and develop scenarios showing what could happen in the future if these threats were to happen.
- Start honest discussions with the employees of the acquired company and other stakeholders (governments, NGOs, media) giving convincing reasons to get employees talking and thinking.

Step 2: Create a guiding coalition

In order to convince employees from the acquired company that change is necessary, it is important to engage workers that represent key areas within the organization. The true leaders of an organization are not necessarily clearly visible members of its hierarchy. Thus, it is important to identify the true leaders (old miners, community townsmen) and ask for an emotional commitment from these key people. Similarly, a good mix of people from different departments and different levels within the company should be required.

Step 3: Develop a shared vision
Once the coalition is formed, and the sense of urgency is established, a clear and shared vision is the next step to keep on incorporating sustainability practices in the acquired company. By developing a short summary that captures what you "see" as the future of your organization, we will have a powerful light that would guide us through the process of change. For instance, Barrick’s CSR charter points out:

“We strive to act as a responsible corporate citizen and lend our expertise to help engage in constructive public dialogue and informed debate on issues of importance to the Company, the mining industry and the communities in which we operate”.

Similarly, a clear strategy that executes this vision, like the one Barrick has created, that focuses on five principles: “ownership, urgency, team-working, continuous improvement and delivery of results”, becomes essential.

Step 4: Communicate the vision

Leaders from the acquiring company need to, at this step, talk often about the change vision. As we want sustainability to be incorporated in the charter of the acquired company, the vision needs to be applied to all aspects of the mining operations – from training to performance reviews.

And last but not least, management needs to continuously communicate examples of what is being done correctly (in environmental, societal and community aspects), and how it is being done.

Step 5: Empower people to act on the vision

Once the vision is clear and it is being transmitted throughout the organization, additional accelerators of the process are required. It is what we call “change leaders” whose main role is to deliver the change.

By checking our organizational structure, we might want to change our performance and compensation systems to ensure they're in line with our vision. For instance, by matching bonus fees to diverse practices aligned with our sustainability and core values.

Recognizing and rewarding people for making change happen is an effective way to accelerate the sustainable changes required in our organization.

Step 6: Create short-term wins

Success is a motivating tool that can clearly accelerate the transformation of our acquired company. Short-term targets that can be easily achieved, for instance better management of communications with other stakeholders, improvement of health conditions at mining sites or investment in social infrastructure can become powerful levers of change if properly applied.

It is much better to create several short-term targets rather than just one long-term goal with little room for failure. The goal is to produce "wins" that can further motivate the entire staff.

Step 7: Consolidate and build on the gains

One typical mistake is that, in the change process, victory is declared too early. Quick wins are just the beginning of what needs to be done in order to achieve a longer-term change. Therefore, it is essential to set goals to continue building on the momentum achieved.

As for the mining industry, goals like zero tolerance to accidents or child labor, or continuous improvement of environmental management are overarching goals that can help us better manage our sustainable processes.

Step 8: Institutionalize the change
Finally, to embed the changes in the DNA of the organization, several mechanisms need to be used. Collection of success stories about the change process, inclusion of the change ideals and values when hiring new staff, and public recognition of key members of the original change coalition are all elements that would help us re-shape our corporate culture towards an enhanced sustainability.
Appendix I: Environmental Issues & Operational Solutions & Social Problems

Environmental issues can be addressed through operational means:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overburden storage</td>
<td>• Maximize stability and provide proper drainage</td>
</tr>
<tr>
<td>• Change local topography</td>
<td></td>
</tr>
<tr>
<td>• Destroy vegetation</td>
<td></td>
</tr>
<tr>
<td>• Earthquake risk</td>
<td></td>
</tr>
<tr>
<td>Tailings</td>
<td>• Use technology to collect the runoff water:</td>
</tr>
<tr>
<td>• Acidification</td>
<td>• Levee and spillway containment</td>
</tr>
<tr>
<td>• Water quality affected</td>
<td>• Fixed pumps, draglines and dredge to</td>
</tr>
<tr>
<td>• Effects on flora an</td>
<td>mechanically mine sand and tailings</td>
</tr>
<tr>
<td>ecosystems: temperature,</td>
<td>• Use an intake dam and pipeline to</td>
</tr>
<tr>
<td>blasting, dirt, humidity</td>
<td>divert tailings</td>
</tr>
<tr>
<td>• Air pollution</td>
<td></td>
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</tbody>
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Operational solutions can also mitigate the social problems of the project:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental effects</td>
<td>• Community healthcare and education</td>
</tr>
<tr>
<td>• Pollution (farming, health)</td>
<td></td>
</tr>
<tr>
<td>Operational effects</td>
<td>• Transparency + Resettlement</td>
</tr>
<tr>
<td>• Appropriation of land (housing,</td>
<td>• Local Employment</td>
</tr>
<tr>
<td>farming)</td>
<td>• Local procurement</td>
</tr>
<tr>
<td>• Indigenous rights</td>
<td>• Health and Safety standards</td>
</tr>
<tr>
<td>• Perceived contribution to the local</td>
<td></td>
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<tr>
<td>economy</td>
<td></td>
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<tr>
<td>• Workers Health and Safety concerns</td>
<td></td>
</tr>
<tr>
<td>Infrastructure/demographic effects</td>
<td>• Stiff controls and security checks</td>
</tr>
<tr>
<td>• Crime, illegal mining</td>
<td>• Social infrastructure and</td>
</tr>
<tr>
<td>• Population demographics</td>
<td>community participation</td>
</tr>
<tr>
<td>• Lack of physical infrastructure</td>
<td>• Private infrastructure development</td>
</tr>
</tbody>
</table>
Appendix II: A synergic and dynamic structure for sustainability in M&A