
APS1013 Applying Innovation in Engineering – Final Team Projects, Fall 2010

Sustainability of Mining Businesses in Developing Nations

Approach & Scope

The following problem statement was put forth by our client Hatch in order for us to scrutinize it and deduce solutions by conducting a research. The problem statement is as follows: *“Resource development opportunities in developing countries are challenging. Local governments or global companies are often involved. The development cost and duration is onerous. Therefore, the question is how one can establish a successful Nickel mining business in a developing country for long term growth.”*

The approach that our team has taken to arrive at the recommendations includes researching about various well known mining projects that have been finished and are currently performing. After scrutiny of these projects a methodology will be deduced based on the lessons learned from the failures and successes of certain individual aspects of these projects. So basically we determine where they have faced major problems and how they have rectified these problems. This includes investigation of the processes and strategies followed by these projects. Then a process of setting up a mining business will be developed, which incorporates the findings from the analysis of previous projects. Later a method to govern and increase the mining business’ longevity will be generated. This consists of defining the steps to be taken by the mining company. Finally various solutions that were the result of the previous projects’ analysis will get sorted and in the end some recommendations will be provided which will hopefully open up a new way of thinking about mining business conduction. The main aim of this report is to provide an insight to shed light on the factors that are being over looked most often by the mining companies. Also it provides an innovative methodology and puts forth beneficial recommendations which must be employed in every mining business in order to retain sustainability.

Executive Summary

Mining is an important part of the modern culture and many products, which are termed as necessary such as airplanes, and computers are created using some significant amount of metal. Virtually everything we use in our everyday lives requires mining. Even most of the food we eat was grown with fertilizers which are made up of minerals that are mined. So we can say without doubt that mining is pivotal in today’s world. Sure, there are several ways to go about conducting a mining business, but only a few businesses which rethink the whole mining process and implement a new and strategic methodology survive in the long term.

Generally mining is thought of as a business, which can be sustained by simply performing the technical tasks fluently. More often than not the socio-economic and environmental aspects are not given a major consideration. Only considering the profit and loss and not caring for the simple aspects such as the welfare of the community and surroundings will only render horrible results. Companies and individual miners are digging for minerals and metals out of the ground to supply a continuously increasing demand due to major development taking place in developing nations such as India and China. The countries that are home to huge reserves often are underdeveloped, where people live on less than \$2 a day. So there is a huge potential of growth for these underdeveloped nations if this opportunity is utilized correctly. So the key question for the host nation is how they can convert this enormous wealth into an economic asset that will help them find ways out of persistent poverty. But the question for the miner is how he can extract the metal content without disrupting the peace and harmony in and around the area. The view of the majority of population today about mining is a negative one. To eradicate this view entirely and to gain trust and respect of the people, a new mining methodology must be created and implemented. This report’s goal is to provide that methodology to the reader in hope that it can enlighten them about the factors which actually determine the sustainability factor of a mining business.

Sustainable development is defined as “a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come”. When any company looks into starting a new mining business that is as negatively portrayed as can be, certain questions certainly linger in the minds of the project owners. The questions such as; how do we achieve sustainable development? How to educate general population about the many positives of mining projects? How do we maintain a good relationship with the host country and its community?

To answer these questions, the root cause of the problem needs to be found and dealt with in a suitable manner. The majority of sustainability factors of a mining business depend on the way the miner deals with the mine surroundings and the respect and compassion he shows for the local community.