

### CBA (HAZARD AND RISK)

So what is a Cost Benefit Analysis? Cost-benefit analysis (**CBA**), is a systematic approach to estimating the strengths and weaknesses of alternatives that satisfy transactions, activities or functional requirements for a business. It is a technique that is used to determine options that provide the best approach for the adoption and practice in terms of benefits in labour, time and cost savings etc.

**CBA** is also defined as a systematic process for calculating and comparing benefits of a project, decision or company policy. In the case of Hazard's and Risk's the analysis compares the benefit to health, safety, environment, asset and reputation against the cost / investment required and determines the associated impact of no investment, part investment and full investment. Additionally the will go further and consider technologies and innovations available to potentially achieve substantial benefit and lower investment levels

### CBA HAS TWO PURPOSES:

- To determine if it is a sound investment/decision (justification/feasibility),
- To provide a basis for comparing projects. It involves comparing the total expected cost of each option against the total expected benefits, to see whether the benefits outweigh the costs, and by how much.



### THE THEORY

Cost-benefit analysis is often used by governments and other organisations, such as private sector businesses, to appraise the desirability of a given policy. It is an analysis of the expected balance of benefits and costs, including an account of foregone alternatives and the status quo.

**CBA** helps predict whether the benefits of a policy outweigh its costs, and by how much relative to other alternatives (i.e. you can rank alternate policies in terms of the cost-benefit ratio). Generally, accurate cost-benefit analysis identifies choices that increase welfare.

Assuming an accurate **CBA**, changing the status quo by implementing the alternative, with the lowest costbenefit ratio, can improve efficiency.

An analyst using **CBA** should recognise that perfect appraisal of all present and future costs and benefits is difficult, and while **CBA** can offer a well-educated estimate of the best alternative, perfection in terms of economic efficiency and social welfare are not guaranteed.



### HOW CBA CAN BENEFIT YOU?

**CBA** will also consider the benefits and costs over a given time period, so looking at the net investment value against a timescale of benefit, provide a timeline of investment versus benefit. The analysis can also take into account fiscal impact, social return on investment, reputation impact on market position and shareholding.

### HOW CBA CAN BENEFIT YOUR PROJECT?

A cost benefit analysis conducted following the results and actions from risk assessments, hazard identification (HAZID) workshops and hazard operability studies (HAZOP), can analyse the outputs and develop a clear strategy of action and cost efficiency.

At **Embark Consulting** we have some of the industry leaders in this area, available to assist your project to manage risks and hazards with greater understanding of the short, mid and long term effects of implementation.



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