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Taking Account of Negative Publicity in Project Economics

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Abstract

The high profile publicity generated by the Greenpeace campaign against the deep sea disposal of the Brent Spar demonstrated the power of public opinion to affect corporate image and operational decisions. Regulatory approval is not the only constraint on the granting of a licence to operate and corporations now ignore stakeholder values at their peril.

Although it is difficult to quantify soft issues such as negative publicity and stakeholder concerns, there is an increasing need to integrate conventional economics with public opinion when evaluating different possible development options. This paper seeks to set out a process for incorporating negative publicity directly into project economics.

We started with an outline study of the effects of two high profile incidents of negative publicity: Hoover's "Free Flights To America" promotion, and the ill-fated launch of Unilever's manganese accelerator soap powder. The results showed that there were two distinct outcomes: the effect on the corporate image and the direct effect on the project, such as the launch of a new product.

The next step was to identify a number of possible outcomes to an escalating scenario of negative publicity within the oil and gas sector. The economic consequences of each possible outcome are expressed as risk assessed values which are the product of the probability and the cost of each outcome.

To show this, we took a hypothetical case of handling of sour gas in a new field development and looked at the possible outcomes from four options for handling the gas: flaring, gas re-injection, power generation and sea water absorption.

The methodology developed in this paper outlines a process for quantifying stakeholder values and potential negative publicity in the planning stages of potentially sensitive projects. The process provides a logical and transparent framework that encourages the exploration of these softer issues. It is designed to provide indicative, rather than definitive values to show whether the inclusion of risk assessed costs would alter the decision based on conventional economics. The process also provides a guide for developing a consistent basis for decision making, checks the sensitivity of the development option to negative publicity and highlights the cost critical areas.

Introduction

"The oil industry does a poor job of managing outrage" and "the industry is to blame for its poor image" were the comments of two speakers at the Third International SPE Conference on Health, Safety and the Environment[1] in 1996.

The influence of the Greenpeace campaign on the deep-sea disposal of the Brent Spar has been a watershed in demonstrating that it is not just the regulators who are responsible for granting a "licence to operate" from society. The values of all stakeholders now have to be taken into consideration when evaluating the costs and benefits of different development options for Exploration and Production (E&P) activities.

In order to meet this challenge, the E&P industry has to find ways of incorporating the disparate values of shareholders, employees, regulators, Non Governmental Organisations and the general public into the business process, with the aim of generating hard numbers for soft issues.

Understandably, there is considerable reluctance to quantify public opinion. Public opinion is volatile: it is shaped as much by the tenor and volume of news stories as by the importance of the incident itself. Quantifying issues involving such high levels of uncertainty are not popular within the engineering culture. As a result, the value of public opinion is often neglected - not because it is considered to be irrelevant, but because there is no methodology available to quantify it.

This paper demonstrates how simple risk assessment techniques can be used to calculate the risk assessed values of four development options of a hypothetical oil and gas field. High and low probability and cost scenarios can be used to demonstrate sensitivities. The aim of this approach is to:

- develop a consistent approach to decision making;
- see if the inclusion of public opinion would alter a decision purely based on conventional economics;
- highlight the most cost and information sensitive issues.

Background

The development of the process started with an outline study of the effects of two high profile incidents of negative publicity outside the oil and gas sector. Hoover's "Free Flights to America" advertising campaign backfired when it was oversubscribed costing the company an estimated £48 million[2]. Unilever had to modify their new "Persil Power" product when tests showed that the manganese accelerator might damage clothing, costing Unilever an estimated £100 million[3]. Analysis of these costs showed that there were two distinct contributing factors: the effect on the corporate image and the effect on the project such as the launch of a new product.

Corporate Costs. Three separate areas of cost sensitivities were identified:

- effect on reputation and licence to operate;
- effect on sales and marketing image;
- cost of managing public relations.

The most important corporate asset is its "licence to operate". The licence can be a physical licence to explore or develop oil and gas fields or it can be granted by the support the shareholders and the workforce. Our view is that corporate reputations and their licence to operate are relatively robust, quickly recover from most of the effects of negative publicity, and are only be seriously affected by major disasters.

Marketing consultants have long recognised the importance of image when selling products. Today's marketing and advertising campaigns are becoming increasingly sophisticated and abstract, concentrating on the portrayal of image or the selling a life-style rather than the physical attributes of the product. This is especially true when competing in markets where the products, such as petrol, exhibit high level of homogeneity and strong price competition. For most consumers there is little to choose between different brands of petrol and there is plenty of choice with outlets. It is, therefore, very easy for consumers to carry out effective protests against oil companies by boycotting their petrol stations.

Finally there is a cost associated with handling negative publicity and minimising the damage to reputation, sales and share price.

Project costs: Project costs are defined as the costs associated with the research and development of a new project. The project may be anything from the development of a new product line, a new oilfield to the decommissioning of an offshore platform.

Negative publicity and the withdrawal of stakeholder support may affect the project at different levels, such as the deferral of the start date, modification of the design, selecting an alternative option or abandoning the project, as was the case with Brent Spar.

The costs are based on the investment in the project to date plus the cost of getting back to the original starting point. There may also be project costs associated with public relations measures. If a project has to be abandoned, the calculations should include the loss of the projected profits, had the project been successful.

Why a Risk Based Approach?

The issues that attract public attention are inherently unpredictable. While we can identify certain facets of an event or issue that are more likely to bring it to the media's attention, it is very difficult to predict the amount of media coverage and the level of outrage that will be generated.

For many years financial analysts have taken a risk based approach to the valuation of future returns from stocks and shares or risky projects. Stocks and shares are inherently risky in so far as they provide uncertain future returns[4]. The past performance of a particular share price can give a measure of volatility but it cannot let us predict its future value with absolute certainty. Financial analysts will typically identify a potential range of future share values and assign a probability to each in order to calculate a Risk Assessed Value (RAV).

Possible share value		Probability	RAV of outcome
+£5000	x	0.40	+ £2000
+ £1000	x	0.30	+ £300
- £1000	x	0.30	- £400
Risk Assessed Value			+ £1900

In the simple example above, the risk assessed share value is £1900, but has a range of expected outcomes from +£5000 to -£1000. The range of outcomes selected can be large or small but the probabilities attached to them must add up to unity (1.0). It is most likely, but not certain, that the actual future value of the project will lie some where between +£5000 and -£1000. The risk assessed value of +£1900 is the area of the highest probability, but any future value is theoretically possible.

We suggest that a similar approach should be adopted to value the potential cost of negative publicity. In order to adopt such a risk based method it is therefore necessary to establish the potential outcomes and probabilities associated with them.

Method

Inputs: Six possible outcomes are considered which are described in more detail in Table 1

- unrestricted operations;
- small design modifications;
- major design modifications;
- alternative development option;
- abandon project;
- loss of licence to operate.

The probabilities are estimated for each outcome, together with the corporate and project costs. These estimates should be made by a team with representatives from different disciplines such as project engineering, project development, economics, public affairs, environmental affairs and senior management. The team will help to build a common view of the problem, dampen differences in the estimates and establish a broad based ownership of the results.

This is probably the most challenging task as there can be considerable reluctance to value the company's licence to operate or estimate the probabilities of the outcomes. Two tools are available that may be very useful in resolving any differences: decision trees and the Delphi process.

Decision tree: An example of a part of decision tree is shown in Figure 1, illustrating how a number of scenarios of escalating events arising from the flaring of sour gas (gas rich in hydrogen sulphide). It starts with an initiating event, where the application to flare is picked up by the media. In this case, it is assumed that there is an 80% chance that it will attract some media coverage. The probability is therefore 0.8. The probabilities at each node must add up to 1, so the probability of not attracting media attention will be 0.2 or a 20% chance.

Probabilities are then assigned to each node in a sequence of escalating events, the probability of public opposition (5% chance), widespread environmental damage from acid rain in Norway (5% chance) and strong international opposition (80% chance). The process finishes with assigning a probability to each outcome for this particular sequence of events - a 5% chance of loss of licence to operate, 20% chance of abandoning the project, 40% chance of selecting an alternative option, etc.

The probability of each outcome for each branch in the event tree is calculated by multiplying the probabilities at each node. For the event sequence given above, the probability of having to abandon the project will be: 0.8 x 0.05 x 0.05 x 0.8 x 0.2 = 0.00032. The probability for each outcome is then calculated by adding together results of the outcomes for each branch.

Delphi process: This is a formal way of encouraging consensus among the team members when estimating costs or probabilities. The team first establishes a basic understanding of the main issues and individual team members are asked to write down their estimates.

If there are significant differences in the results, the individuals are then separated but are allowed to see the estimates made by other team members. The isolation of individuals prevents any particularly dominant members of the team from swaying the team decision.

This process can be repeated until the divergence of opinion is minimised. If some significant differences still remain, the extremes of opinion can be used to generate high and low probability and cost scenarios.

Calculations: The method for calculating the risk assessed values (RAVs) are shown in Table 2. The RAVs are calculated adding the corporate and project costs and by multiplying the probabilities. The RAV for each outcome is added together to give a RAV for the development option. The development options can then be ranked by RAVs and compared with the ranking of the original cost estimates to determine the sensitivity of the development option to negative publicity or stakeholder pressure.

Hypothetical Case Study

The following hypothetical example is given to show how risk assessment techniques might be used to help select the appropriate disposal route for the sour gas to be produced at a new offshore production facility.

Development Options. Development options are simply the options available for disposing of the gas and include:

Development option	Option Cost
Flaring	£4 million
Gas re-injection	£8.2 million
Power generation	£8.5 million
Sea water absorption	£14 million

Each option has a cost that must be incurred to place, maintain and operate the technology. In simple cost terms flaring is clearly the most attractive option.

Potential outcomes and costs. Table 3 lists potential outcomes and the additional costs associated with them. Project costs include costs of redesign or modifications if required. Ultimately project costs may include the total spend to date if the project has to be abandoned.

Corporate costs are those costs incurred by the wider corporation and are principally the value of the licence to operate, loss of profits reflected in share price any public relations expenditure to minimise or repair any damage to the corporate image and reputation.

Probability of outcomes. A probability must be assigned to each outcome for each option. As noted above, a Delphi type process involving relevant stakeholders can be a useful tool for deriving probabilities. Probabilities are given in Table 4. Following the method detailed in Table 2, RAVs have been calculated for each option and are given in Table 5.

The risk assessed values of each option are considered below in conjunction with the conventional costs:

Options	Option Cost	Risk Assessed Value	Adjusted Total
	£ million		
Flaring	4	9.7	13.7
Gas re-injection	8.2	6.6	14.8
Power generation	8.5	1.5	10
Sea water absorption	14	2	16

In the absence of RAVs, flaring is the clearly the preferred option with a £4m advantage over the next most attractive option. In terms of negative publicity, flaring is however the most risky option with a RAV in the region of £9.7 million. In this hypothetical case study taking the risk of negative publicity into account makes power generation a viable economic alternative.

Conclusion

Brent Spar demonstrated that deep-sea disposal, the most cost effective option using conventional economics, may not be the cheapest option if a project attracts negative publicity. The values of all stakeholders now have to be taken into consideration when evaluating the costs and benefits of different development options for Exploration and Production (E&P) activities.

The methodology developed in this paper outlines a process for this quantifying stakeholder pressure and potential negative publicity and incorporating the results into project economics. The process we have described provides a logical and transparent framework that encourages the exploration of these softer issues. The risk assessed results provide a guide for making consistent judgments, whilst evaluating the sensitivity of the project to stakeholder pressures and highlighting the most sensitive issues.

References

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Table 1 Definitions of outcomes

Outcomes	Definition
Unrestricted operations	The choice of a particular development option leads to no adverse publicity or restrictions on freedom to operate. This outcome has no associated (additional) costs.
Modify design	The overall development option remains the same but requires some minor modifications. These modifications will increase the development option costs by no more than 10%. It is assumed that such minor modifications will have negligible corporate costs.
Redesign development option	Major design modifications are required, within a chosen development option, to accommodate public/environmental concerns. These costs will include the cost of any deferred oil as a result of delays in the production schedule. This will include the corporate cost associated with managing any negative publicity.
Use alternative development option	The chosen development option is abandoned through either public pressure or regulatory decision. All spend associated with that development option to date will be lost. The cost of the new option will have to be taken into account. Additional costs may also be incurred deconstructing the abandoned option. There may be some significant corporate costs associated with managing negative publicity and a possible effect on share value.
Abandon project	The choice of the original development option has raised public outrage to a level at which there is no technological development option which will be acceptable and the whole project has to be abandoned. In this instance all spend on the project to date will be lost as will anticipated profits. At the corporate level a large spend may be required to manage the negative publicity and there may be a significant loss in sales and resultant fall in share price.
Corporate disaster	The project has been abandoned and the effects of the negative publicity are such that they threaten the very existence of the company's licence to operate. The project costs are those associated with the loss of money spent to date and the loss of expected profits. Corporate costs may be assessed in terms of the total corporate value (the capitalised value of the corporation).

Table 2 Method for calculating risk assessed costs

Outcomes	Probability of Outcome	Corporate Cost	Project Cost	Risk Assessed Costs (RAV)
Unrestricted Operations	p1	c1	d1	p1(c1+d1)
Modify Design	p2	c2	d2	p2(c2+d2)
Redesign Option	p3	c3	d3	p3(c3+d3)
Use Alternative Option	p4	c4	d4	p4(c4+d4)
Abandon Project	p5	c5	d5	p5(c5+d5)
Corporate Disaster	p6	c6	d6	p6(c6+d6)
			Total RAV = $p^{1...n}(c^{1...n}+d^{1...n})$	

Table 3 Potential outcomes

Outcomes	Project Costs	Corporate Costs
Normal operations	0% cost of option	£0
Modify design	10% cost of option	£30,000
Redesign option	50% cost of option	£100,000
Use alternative option	100% cost of option	£500,000
Abandon complete development project	All expenditure lost (£5 million)	Value of project to company (£175 million)
Corporate Disaster	Not applicable	Company Value (£1 billion)

Table 4 Probability of Outcomes

	Probability of outcome			
Outcomes	**Flaring**	**Sea water**	**Power**	**Injection**
Normal operations	0.25	0.80	0.70	0.20
Modify design	0.02	0.12	0.10	0.30
Redesign option	0.3	0.05	0.15	0.10
Use alternative option	0.3899	0.02499	0.04499	0.39499
Abandon complete project	0.04	0.005	0.005	0.005
Corporate Disaster	0.0001	0.00001	0.00001	0.00001

Table 5 Risk Assessed Values of Outcomes

	Risk Assessed Values			
Outcomes	**Flaring**	**Sea water**	**Power**	**Injection**
Normal operations	0	0	0	0
Modify design	8,600	171,600	88,000	369,000
Redesign option	630,000	355,000	6,52,500	605,000
Use alternative option	1,755,000	112,500	405,000	4,719,000
Abandon complete project	7,200,000	890,000	890,000	890,000
Corporate Disaster	100,000	10,000	10,000	10,000
Total Risk Assessed Values	**£9.7 million**	**£1.5 million**	**£2 million**	**£6.6 million**

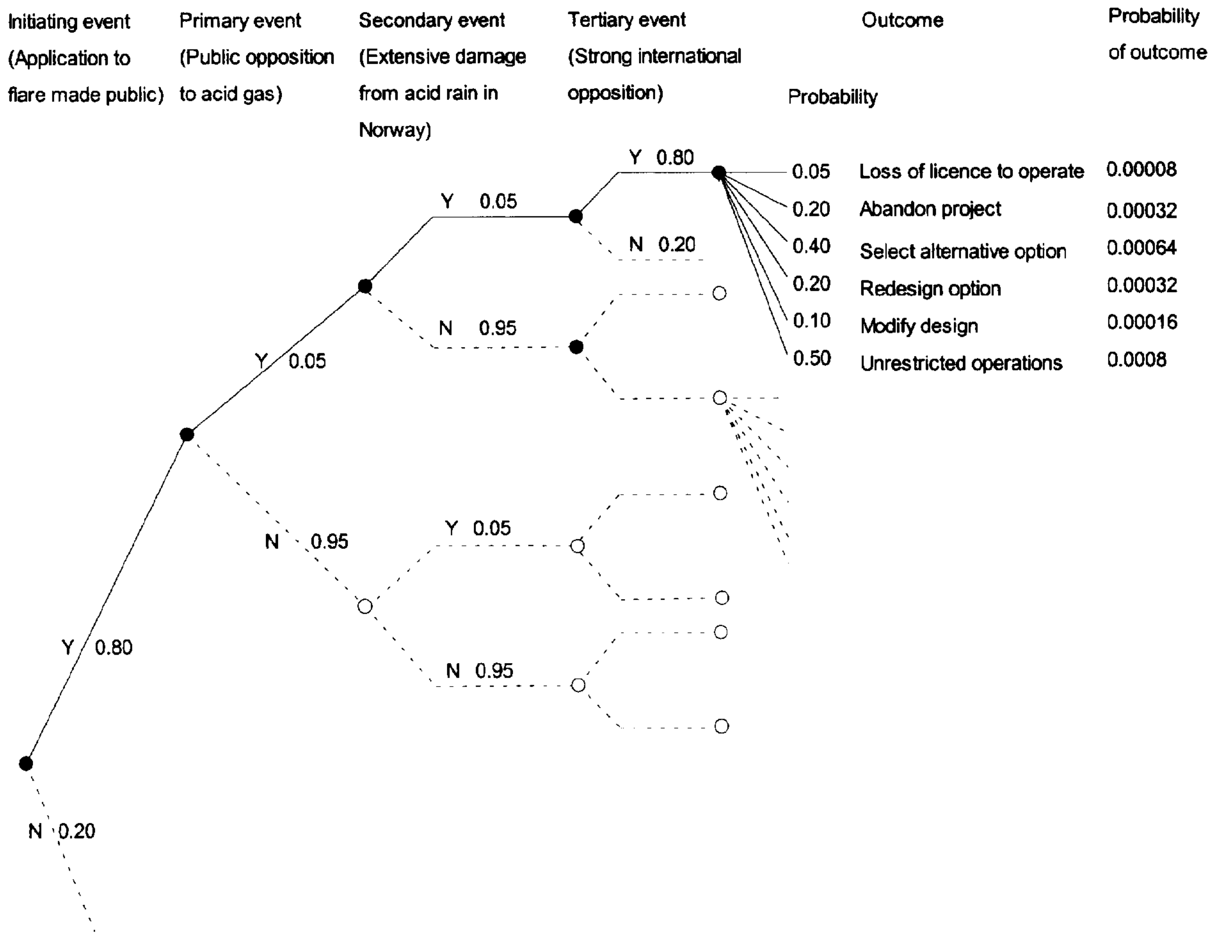

Fig. 1-Example showing part of a decision tree to estimate the probabilities of the outcomes from flaring