Accounting for sustainable development performance

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1. Project overview

1.1 The sustainable development agenda

‘Sustainable development’ (SD) is defined by the UK government’s Department of Environmental Food and Rural Affairs as:

‘...development which meets the needs of the present without compromising the ability of future generations to meet their own needs’.

The UK government’s assertion that ‘the increasing stress we put on resources and environmental systems such as water, land and air cannot go on forever’ is shared by organisations and governments worldwide.

The imperatives for pursuing SD are recognised and embedded in international, national and regional government processes, including statements of strategic intent from government (in Department for Environment, Food and Rural Affairs, 2005a and Scottish Executive, 2006), in specific policy initiatives (such as the UK emissions trading scheme) as well as within evaluative frameworks (such as strategic environmental assessment). Governments have started the process of shaping and guiding the economic system to deliver SD outcomes, rather than a much narrower focus on economic growth. Such moves find resonance in initiatives within the corporate sector, which seeks to allow organisations to address the social, environmental and economic impacts of their activities.

One aspect of the corporate social responsibility agenda addresses:
- how corporations conceive of SD
- what actions are being undertaken to respond to this agenda
- how accounting may transform in response to this agenda.

One particular area of practice and research relates to how organisations evaluate the effectiveness of interventions, with a view to establishing a baseline performance level regarding the extent to which activities conform to SD principles. It is reasoned that, if evidence can be found of SD being incorporated into the capital allocation processes, then prima facie this adds credence to organisations’ assertions that they are seeking to work towards SD goals.

This research project is concerned with ascertaining if, and how, the principles of sustainable development are considered and addressed in the corporate environment.
1.2 Approaches to measuring sustainable development performance

The research suggests that responses to the SD agenda are various, and characteristics of three broad approaches to measuring (and evaluating) an organisation’s SD performance is noted. First, and at their most basic, such responses take the form of confirmation of the presence of various SD performance indicators which together are seen to provide an overview of SD performance. (The particular methodology behind the combination of indicators is not articulated in this approach). A weakness of such a response is that, while each indicator may be of interest to the reader, how a set of indicators can be understood to indicate progress towards or away from SD is not obvious.

Secondly, indicator sets are sometimes coupled with explicit decision rules (or weightings) which provide a composite picture of SD performance. These allow a judgement to be made regarding whether or not SD performance is being achieved. Under this approach there is the possibility of a single figure, which purports to represent the overall performance of the ‘entity’ under evaluation, being drawn out.

A final approach uses indicator sets with decision rules to create a common measurement unit or score. Rather than produce an abstract number from a multi-criteria decision tool, a common metric, having some traction with those using it, is generated. (The common metric is often, but need not be, money). This approach includes a full cost accounting (FCA) approach to articulating SD, and this technique is the focus of this report. In contrast to the other approaches, monetised approaches weight and combine elements of SD through the method of monetisation.

The objective of the various approaches is fourfold:
1. To make transparent the various interactions arising and make explicit how these drive external environmental and social impacts.
2. To provide a consistent measure of SD performance (enabling trends over time to be observed).
3. To enable decisions to be made on the basis of the information generated.
4. To enable individuals to participate in discussions about SD performance.

The research executive summary includes practical examples of each approach with the conclusion that, while each has its own strengths and weaknesses, none of the examples described is perfect in its conception or execution.

2. Project objectives

The objective of the research project are to:

a) Consider and present responses to the SD agenda.
b) Gain an understanding of the extent to which organisations are incorporating SD performance considerations into the capital allocation process.

Implicit objectives are three-fold:
1. To ascertain whether it is possible to implement measures to incorporate SD performance assessment within organisations.
2. To present a specific (case-study based) context whereby such measures may be implemented.
3. To evaluate the effectiveness of this approach.

3. Implications of the findings for practical application

3.1 Introducing the Sustainability Assessment Model (SAM)

It is with the generic aims outlined in section one (above) that British Petroleum (BP), the world’s largest oil and gas corporate, developed the SAM – a four step FCA-based approach to evaluating the contribution of various proposed activities (projects) to the sustainable development agenda.
The SAM is a four step cradle to grave approach that represents selected economic, resource, environmental and social impacts of any project in monetary terms, in the form of a signature graph.

**Step 1: define cost objective.**
The SAM defines the focus of the exercise as being a discrete project guided by a project team.

**Step 2: specify the scope of the analysis;**
The boundaries of the SAM evaluation are widely defined to track the impacts of a project over its full life cycle, extending beyond those impacts directly controllable by the project team.

**Step 3: identify impacts of the cost objective;**
These are considered under four headings (economic, resource use, environmental and social).

**Step 4: monetise the impacts.**
Physical measures of project impact are converted into a common measurement base: money. A variety of monetisation approaches may be adopted, with current prices of the open literature being used as far as possible, for identifying a monetisation mechanism. Once the modelling of the transformations which the project creates, and the identification of significant flows is complete, these may be converted into financial terms, allowing them to be graphed together. The result is a ‘signature’ graph which forms the basis of further discussions about what the output of the SAM implies.

In ascertaining the effectiveness the use of the SAM by BP to evaluate SD performance, and in extending the focus from the oil and gas sector to other industries, it is observed that SD performance evaluation is possible although it is further noted that tools may need to be different from the SAM in order to adequately to capture the SD issues faced by a particular industry. In particular the political context, regulatory framework, the structure of an industry and the number of different players in a project lifecycle are noted as the factors likely to affect the effectiveness of a performance appraisal approach. This suggests that experimentation sympathetic to each industry’s circumstances needs to be undertaken before any generic tools for SD performance assessment can be developed.
3.2 Introducing the SAMi
Using a capital substitution rule that a project must have all elements in the positive to be deemed to be sustainable but that positive and negatives in a capital category can be tolerated, the opportunity to collapse all aspects down to a single figure: an index of the SAM (termed a SAMi), exists. This may be calculated by taking the sum of all categories (+ economic – resource – environmental + social) and dividing this by the absolute sum of all elements. In this way the net positive benefit as a percentage of total impact (both positive and negative) could be gauged. The nearer this figure is to 100% the more sustainable it could be said to be.

There are pros and cons of adopting such an approach. If several SAMs were being compared together and if some ranking of them were sought, then developing a single numerical representation of the combined outcome of the SAM may be useful. In this situation relative performance could be gauged (providing that the broad relationships between the numbers are not materially wrong). Likewise, developing a single figure to represent success or failure appears to be a deeply held human desire.

It is further noted that:
• If robust linking of SD aspirations to operational performance is to be achieved, organisations should be encouraged to experiment with developing their own SD evaluation approaches.
• Where such experimentation is undertaken, it is beneficial for organisations to disseminate awareness of these (internally and externally), since there is much to be learnt from these.

4. Conclusions
Corporations are undertaking a variety of responses to the SD agenda, with many organisations seeking to explain how they contribute to the goal of SD. Although the growth in stand alone non-financial reporting provides evidence of corporate engagement with aspects of the SD agenda, it is hard to infer from this the extent to which organisations are incorporating SD thinking into their internal decision making processes.

Findings from the research suggest that the SAM is a relatively robust tool in terms of its facilitation of broad modelling of the transformation that arises from a project. It is observed to engage individuals’ thinking about SD. Although it has not yet been perfectly achieved, the report suggests that implementation of measures to incorporate SD performance assessment by organisations is possible. Where the SAM did mesh with the underlying organisational rationalities, it was deemed to be an effective way of raising awareness of SD and affecting decision making processes.

A number of impediments to widespread adoption of SD modelling were encountered. In particular, the ‘fit’ between an SD evaluation tool and an organisation’s culture, strategy, ethos and existing performance evaluation methods appears to affect the impact of a tool with respect to decision making.

5. Appendix: Accounting for Sustainable Development: a case study
Application of the SAM at BP
Introduction
A multi stage process is used by BP to move from identifying an opportunity, evaluating the viability of that opportunity to undertaking the activities necessary to complete the project. At each stage of the process there is the requirement to pass through a ‘gate’. This entails presenting a business case for the project to a group of ‘gatekeepers’ (which, in the joint venture environment, includes partners). In this respect the control of a project does not rest entirely with an operator, but has to be jointly agreed among all partners to a project. There are
decision support packages at each stage of evaluation which specify minimum requirements for information to be presented (for example, financial, health and safety, and environmental information). In addition, there are requirements to evaluate aspects of performance for which no set procedures are required. In this case, project teams will search BP’s intranet to see what decision support tools have been used in the past* and hence what may be useful for their purposes. Such an approach is consistent with a decentralised organisation that organises itself via compliance with targets and a strong performance review culture.

* BP requires teams to write up their experiences with, among other aspects, project appraisal tools so that information is available to others taking decisions. In this way, the intranet acts as a repository of organisational knowledge which is available to all. Accessing this information obviously generates search costs, but this has to be balanced against costs which would arise from specifying one standard approach for all projects (which may result in some projects undertaking inappropriate evaluations).

In this process, the SAM could become used in two ways. First, write ups of the ‘lessons learned’ from experimenting with the SAM could end up on the intranet and be picked up by other teams for use. Alternatively, if someone wished to champion SAM they may seek to communicate their enthusiasm about the tool via networks or distribution lists of interested people (environmental champions, for example). At a formal level, if the SAM was deemed to be a necessary part of the decision support package then it could be formally required of all projects (this is not currently the case, bearing in mind the ‘compulsory’ set of tools is quite small). As a result, there are both formal and informal networks through which information on the SAM could be obtained.

An oil and gas field development was used to develop the SAM template. The SAM, however, was run on several different oil and gas fields and a variety of results were obtained. In addition, an attempt to see if the SAM could distinguish performance by changing extraction approaches was undertaken. The oil and gas SAM template is then used to put the other two SAM experiments in context.
Oil and gas projects

Several SAM runs were developed on hydrocarbon projects and they all resulted in the same shape of signature (see Figure 1). The SAMi score, however, varied from a low of 25% through to a high of 35% over the various projects. The best of these projects (as judged by having a higher SAMi) was a gas development. In this case the pollution impact for energy made available from the development was such that a better signature and score were achieved. In addition, the recovery ratio on a project played a pivotal role in the SAM profile achieved. The lowest score was obtained by a project where a fractured geology led to a relatively low reservoir recovery ratio.

An observation on the SAM emerged in the context of a comparative assessment of the oil and gas SAMs. A presentation of the SAM was made to the project team which ‘scored’ a SAMi of 25% and a note of the other SAMis were provided. This lead to a heated discussion as to how the 25% scoring project team could improve their score and hence outperform other projects. This discussion took place regardless of the fact that the presentation has emphasised the uncertainties in the data and the problems of believing that one number could appropriately capture project performance. There are two conclusions which could be drawn from this observation. First, the tendency of individuals to focus on a single measure was reinforced by the way in which this project team focused on the ‘bottom line’, as they saw it, of their SD performance. Second, the extent to which tools motivate performance should not be underestimated. This was the presentation of an experimental snapshot of performance, yet it still motivated individuals to rethink the design of their project. This experience suggests that the SAM can effectively engage individuals in conversations about project performance regardless of the ‘rightness’ of the numbers.
6. Additional outputs of interest include:


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