A decision-analysis-based framework for analyzing stakeholder behaviour in scenario planning

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Abstract

Scenario planning is a method widely used by strategic planners to address uncertainty about the future. However, current methods either fail to address the future behaviour and impact of stakeholders or they treat the role of stakeholders informally. We present a practical decision-analysis-based methodology for analysing stakeholder objectives and likely behaviour within contested unfolding futures. We address issues of power, interest, and commitment to achieve desired outcomes across a broad stakeholder constituency. Drawing on frameworks for corporate social responsibility (CSR), we provide an illustrative example of our approach to analyse a complex contested issue that crosses geographic, organizational and cultural boundaries. Whilst strategies can be developed by individual organizations that consider the interests of others – for example in consideration of an organization's CSR agenda – we show that our augmentation of scenario method provides a further, nuanced, analysis of the power and objectives of all concerned stakeholders across a variety of unfolding futures. The resulting modelling framework is intended to yield insights and hence more informed decision making by individual stakeholders or regulators.

KEY WORDS**:** Strategic planning; ethics in OR; decision processes; scenario method; education.

1. Introduction

Scenario analysis has long been recognized as a tool for strategic analysis by organizations (cf. Schoemaker, 1991). In an uncertain and volatile world it avoids the dangers inherent in statistical extrapolations of current trends, or the biases that are often associated with experts' estimates of future event probabilities. It provides a structured approach to enable the development of *multiple* narrative-based characterizations of how possible futures might unfold and allows alternative strategies to be tested so that their effectiveness and robustness can be assessed across these different futures. Recently, the combination of scenario method and multi-attribute decision analysis has been developed to allow the effectiveness of strategies to be modelled when an organization has multiple objectives. The approach reflects the need to overcome the cognitive biases that have been identified in behavioral decision research. Because the human mind has limited information processing capacity these are likely to be particularly prominent when complex multifaceted problems are faced (e.g. Hogarth, 1987). The method addresses this by combining the benefits of using a structured 'divide and conquer' approach to decision making with those of scenario planning, such as its ability to challenge prevailing mental models and strategic inertia. As such, it offers a number of advantages to alternatives, such as the use of decision tree analysis for aiding decision making in the face of uncertainty (cf. Goodwin and Wright, 2001; Montibeller et al, 2006). However, one aspect of scenario planning that has received little attention is the development of structured approaches for anticipating the behaviour of stakeholders within particular scenarios (cf. Wright and Cairns, 2011). This aspect can be important because powerful stakeholders, whose interests are threatened by changes in their environment, are unlikely to remain inactive and their behaviour is likely to have a direct effect on the alternative futures that may prevail.

In this paper, we extend scenario methodology by developing a practical and transparent modelling framework that allows the behaviour of stakeholders to be analysed within unfolding scenario storylines. The analysis is based on assessments of stakeholder objectives and power and their possible actions and reactions within alternative futures. The extended analysis therefore has the potential to help strategic planners to make more informed choices. For regulators, such as governments or international agencies, it can allow ethical aspects of decision-making to be addressed and can enable them to create pre-emptive legal and other frameworks that protect less powerful stakeholders from the actions of those who wield more power. Through an illustrative example, we show how the decomposition structure that is

inherent in our stakeholder analysis provides insights for understanding the complex interplay of individual stakeholder actions.

The paper is structured as follows. First, we outline the intuitive logics scenario method as a tool for envisaging possible alternative futures that are regarded as being critical in terms of the uncertainty associated with them and/or their potential impact on an organization. We discuss how this basic method has been developed to involve consideration of the different perspectives of stakeholders (this enhancement is referred to as "critical scenario method" (CSM)), but argue that this approach should be extended further so that the behaviour of different stakeholders in different futures can be anticipated. Then, we outline our augmentation of current scenario methods through embedding the stakeholder analysis framework. Thereafter, we present our illustrative example of application to the international business of ship disposal. Finally, we discuss the implications and limitations of our approach.

2. Intuitive logics and the critical scenario method

In the basic intuitive logics approach to scenario development (Cairns et al, 2010, Wright and Cairns, 2011, Chapter 2), a focal issue is first analysed by exploring the "driving forces" – political, economic, social, technological, ecological and legal (PESTEL) factors – that will shape the emergent future. These driving forces are then clustered through causal/chronological analysis to determine a smaller number of "higher level factors", impactful to the focal issue. These factors are subjected to comparative impact/uncertainty analysis, using a matrix where each is first ranked along the length the horizontal axis for perceived impact on the issue relative to all others. Then, without disturbing this horizontal ordering, they are ranked for relative uncertainty on the vertical axis – where uncertainty is related to what the *outcomes* of events that the factor encapsulates might be.

The two factors that combine the greatest perceived impact with the greatest perceived uncertainty as to what that impact will be are labelled Factor A and Factor B. Four scenarios are constructed around the combination of "extreme outcomes" of Factors A and B (A1/B1; A1/B2; A2/B1; A2/B2). These outcomes need not be set on some "best/worst" continuum but, rather, might be defined in very different terms (e.g. financial vs. environmental) or in differential terms of either good (fine vs. excellent) or bad (poor vs. diabolical).

A key aspect of scenario development is that a wide range of perspectives and viewpoints should be brought to the process. One way to foster this is to ask participants to   consider the

interests of stakeholders and how they might behave to protect or further these interests (Wright and Cairns, 2011). However, in the basic scenario method consideration of stakeholders is an option to be used only when scenario builders consider their actions to be relevant. Cairns et al (2010) suggested that this is a limitation and proposed what they have referred to as "critical scenario method" (CSM) which prompts interrogation of each of the scenarios from the perspective of the full range of stakeholders using Flyvbjerg's (2001, 2003) value-rational question framework for phronetic social inquiry, namely:

- "Where are we going?
- Is this development desirable?
- What, if anything, should we do about it?
- Who gains and who loses, and by which mechanisms of power?" (Flyvbjerg, 2003: p. 364)

In the extant CSM literature, the answer to the first question (Where are we going?) is assumed to be answered by the title and brief outline of each of the four scenarios – presenting four different possibilities that are applicable to all stakeholders. The answers to the second and third questions are set out in a basic tabular format that summarises each in a few words for each stakeholder group for each scenario in terms of a projected impact (Is this desirable?) and response (What should we do?). Here, the "we" is defined as the particular stakeholder group for whom the question is being considered. The final question is answered in summary form that considers all stakeholders and assesses which groups are major winners, which lose out and who holds key power, with the results presented in a tabular summary of basic "win/lose" options (Cairns et al., 2010, p. 977).

CSM can inform organizational strategic planning; either for the self-interest of the stakeholder or to prompt advocacy and action by concerned stakeholders in support of others who may be largely powerless and excluded. However, it does so in a fairly basic way that lacks consideration of strategic options available to businesses, the nature of organization/stakeholder interplay and the values that might underpin managerial decision-making in response to different scenarios and in accordance with different corporate social responsibility (CSR) agendas. While the approach requires explicit consideration of mechanisms of power as currently conducted, it sets the various outcomes within a basic winner/loser choice and, as a result, it is not sensitive to different degrees of winning or losing for individual stakeholders across scenarios, or to the

relative power of multiple stakeholders within each scenario. In addition, it does not consider how a single organization may vary or put aside its corporate social responsibility agenda (cf. Garriga and Melé, 2004) under volatile market conditions. Tapinos (2012) distinguishes between scenario development – the construction of scenario stories of possible and plausible futures – and scenario planning as a process that is directed towards decision-making and action through combining scenario development with strategy development. It can be seen that CSM, as it is currently presented, engages with scenario development and the role of stakeholders but, through its basic binary classifications, it lacks sophistication to effectively inform strategy development and hence action.

3. Background to the augmented CSM method

3.1 The role of decision analysis

Given the relative informality with which CSM incorporates the assessment of stakeholder values and actions, our enhancement of CSM involves the use of decision analysis modeling methods to apply a structure to the process. Decision analysis can yield a number of potential benefits in this context (cf. Goodwin and Wright, 2001, 2014, Ram and Montibeller, 2013, Stewart et al. 2013). The need to consider a broad range of issues across a range of futures, including the organisation's objectives and trade-offs between them, the performance of alternative strategies and the possible behaviour of significant actors within different scenarios can mean that scenario planning will be complex. In the face of this complexity behavioral decision research suggests that decision makers will address a restricted set of issues so that the planning problem, as they frame it, is a distorted and deficient representation of the real problem. The decomposition structure inherent in decision analysis is designed to allow decision makers to address all the key issues involved in a decision and determine whether the existing set of options and objectives can be enhanced (Ram and Montibeller, 2013). Ram and Montibeller (2013) combined multi-attribute decision analysis with scenario planning in three case problems in Trinidad and Tobago and found that it encouraged participants to gather more information about options reflect on whether the existing set of options could be improved upon.

Decision analysis can also provide a number of tools to support the specific requirements of an augmented CSM. First, it can assist in the identification and structuring of the objectives of stakeholders (Montibeller and Franco, 2011). This can be done within the context of a value-focused framework (Keeney, 1992) which seeks to help decision makers to surface their

fundamental objectives –objectives that are both essential and controllable, in that the decision alternatives can influence the extent to which the objective is achieved. This framework is intended to make explicit 'the values that one cares about in [a given] context' and hence produce statements of what the stakeholder wants to achieve in that context. The value-focussed framework distinguishes between means and ends objectives. An ends objective is an essential reason for a stakeholder's interest in a situation. For example, it may be the minimization of the health impacts of an industrial activity on local population. Means objectives are those that are important because they have implications of other objectives. For example, the minimization of sulphur dioxide emissions may be a means objective because it is important in order to minimize heath impacts.

Tools such as means-ends objective networks and cognitive mapping can be used to sharpen an analyst's understanding of the different stakeholders' objectives and to distinguish between the different types. Gregory and Keeney (1994) report on an application of this approach in the elicitation of stakeholders' objectives in relation to a proposal to construct a coalmine in Malaysia. The objectives here were elicited directly from representatives of the stakeholders and the intention here was to bring stakeholders together in the hope that they could find a solution that resolved their different interests. However, a key outcome was the generation of new policy alternatives that were acceptable to all parties. Such creative insights could also be helpful to an analyst attempting to anticipate alternative actions that might be pursued by actors who, while they are not formally engaged in negotiations or direct communications with other stakeholders, may through self-interest be considering mutually beneficial courses of action. Keller et al (2009) give detailed examples of other applications intended to: "identify mutually agreeable alternative actions, design new and better alternatives, and foresee opposition to decisions." Again, these involved direct elicitation of objectives from stakeholders.

However successful applications of decision analysis to negotiation problems described in Raiffa (1982), Ulvila and Snider (1980) and Goodwin and Wright (2014) found that the use of multiattribute value analysis helped analysts to anticipate the objectives and actions of actors without the opportunity of direct elicitation and even where attempts may have been made to conceal these factors to secure an advantage in negotiations

Means-ends networks and similar tools can be linked to other decision analytic tools such as value trees (or objectives hierarchies) (Goodwin and Wright, 2014) to facilitate the formal evaluation of options against objectives. Such an evaluation will require the objectives to be represented as attributes (e.g. tonnes of SO_2 emitted) which need to be carefully selected to allow measurement of the extent to which objectives are achieved if different options are

pursued (Keeney and Gregory, 2005). These allow attribute values to be assigned numeric preference scores with the intention of making an unambiguous assessment of an option's performance on an objective. Unambiguity is achieved when it is clear how to score a consequence on an attribute or how to interpret a score as a given consequence (Keeney and Gregory, 2005).

When addressing uncertainty, decision analysis methods have typically employed assessments of probabilities, with utilities being used to represent decision makers' risk preferences. However, when decision makers have multiple objectives such analyses can be extremely complex. Durbach and Stewart (2012) provide a critical review of alternative methods and conclude that "[the combination of multicriteria decision analysis and scenario planning] exemplify reasonable compromise positions on the spectrum between methods that are theoretically rich but heavily parameterized and practically complex, and those that are transparent and easily understood but may not conform to prescriptive principles of rationality". If assessments have to be made for multiple stakeholders the need for such compromises is even greater as otherwise the analysis may well become intractable.

In almost all modelling processes there is a tension between the extent to which the model represents the real problem and the simplifications that are required to keep the process tractable. However, the simplification inherent in models brings a number of benefits. It allows decision makers to enhance their understanding of problems by focusing on key issues, unobscured by less important details. In decision analysis it may even allow a more faithful representation of a real problem because the judgments that need to be elicited from decision makers are likely to be more straightforward and hence less prone to error (Edwards and Barron, 1994). Simple modelling processes are also likely to be more attractive to decision makers who may be suspicious of "black box" mathematical methods or unwilling to expend the necessary time and effort demanded by more complex formulations, though this to some extent may depend on cognitive decision making style (Boschetti et al., 2011). The use of a simple approximate model with acknowledged limitations may be preferable to a situation where decision makers resort to unaided judgments because they are unwilling to engage with a difficult modelling process (Keeney, 2004). These considerations lead us to propose the use of relatively simple decision analysis models within a CSM framework.

3.2 Identifying stakeholders

Goodpaster (1991) states that, whilst an organization's managers may not be personally

indifferent to the plight of strategically unimportant stakeholders, as managers their concerns are likely to focus on the concerns of financial stockholders. Similarly, whilst agreeing Freeman's (1994) "broad" definition of stakeholders – as those who can affect or are affected by the achievement of the organization's objectives – Heath (2006) notes that any downgrading of stockholder interests creates tension with corporate law, where most jurisdictions provide stockholders a special status that can be legally enforced. Carson (1993) takes this line of argument further in a more general way, arguing that the lesser interests of more important stakeholders should sometimes take precedence over the greater interest of less-important stakeholders.

Tashman and Raelin (2013) note that "stakeholder salience" to a particular firm will often be based on managerial perceptions. They note that when a firm's managers perceive stakeholder interests as conflicting, they are likely to assume that these interests are mutually exclusive. They then argue that, in such situations, managers may overlook one or more stakeholders because of an inability to cope with the resulting complexity – labeling this a "boundedly rational" response. Alternately, managers may undertake stakeholder analysis only to identify those that might resist or retaliate against the organization's actions (cf. Ackermann and Eden, 2011).

The approach that we present here is specifically designed to enable engagement with complexity and ambiguity and facilitate "democratic conversation" on points of conflict. We challenge notions of "important" and "less-important" stakeholders where the focus of decision-making is on achieving a common good – providing the best outcome for the greatest number rather than the greatest return to the financial stockholders, who may be relatively few in number. Miles, Munilla and Darroch (2006, p. 195) propose such an inclusive approach, stating that it is good business practice "to actively engage all stakeholders…[] in the development of sustainable strategies that reflect both economic and socially responsible outcomes". It is to such a value set of business and managerial decision-making that our proposed framework is directed.

3.3 Overview of the augmented critical scenario method

As outlined above, the application of the intuitive logics scenario method will result in four scenarios, each representing a plausible future. Stakeholders may, therefore, find themselves in a given scenario, which may have emerged as a result of factors beyond their control. For example a UK oil company may find that an overseas government has introduced new legislation which places restrictions on foreign oil exploration in its territory. For each

stakeholder each scenario may therefore have important implications for the extent to which its objectives are achieved. In some cases the emergence of a given scenario may be beneficial to that stakeholder in that its objectives are largely achieved. For example a domestic oil company would probably benefit from the legislation described above. However, if a stakeholder finds that the conditions prevailing in a particular scenario are inimical to the achievement of its objectives it is likely to take action to attempt to remedy the situation *if* it has the power, relative to other stakeholders, to do so. Figure 1 categorises stakeholders based on their power and interest in influencing future events.

INSERT FIGURE 1 ABOUT HERE.

The concept of power itself is the one of the most contested in the social sciences (cf. Rowlands, 1997, Kabeer, 1999). It has been viewed as the ability to make choices (Kabeer, 1999), the ability to overcome resistance to one's intended actions from another actor (Emerson, 1962), the capacity to impact the surrounding world and the capacity to dominate other beings (Lukes 1974), the capacity of individual actors to exert their will (Finkelstein, 1992) and the ability to intentionally change another actor's action-environment (where the action-environment consist of an actor's alternatives, understanding of the situation and valuation) (Balzer, 1992). Flyvbjerg (2001, 2003) discusses complex understandings of power with reference to the philosophical texts of Nietzsche, Foucault and others.

In augmented critical scenario method the strategic choices available to stakeholders are already specified explicitly so it is important not to double count the ability to make these choices when making a subsequent assessment of a stakeholder's power. Power is therefore perceived as being related to an individual strategy and reflects the ability of a stakeholder to pursue that strategy given the conditions that prevail in a scenario and the potential actions of other stakeholders. This means that stakeholders who have no option but to pursue a single strategy may have power in some scenarios when there is no resistance to this strategy. Formally, we define power as the probability of being able to implement a strategy in a given scenario. An "equilibrium" state, in relation to a particular scenario will occur when either: (i) all stakeholders have their objectives satisfied by the unfolding of external events without the need for stakeholder action by those with power, (ii) the stakeholders with power act to improve achievement of their own objectives *and* no stakeholder is disadvantaged in objective(s) achieved by the opposed actions of another (more) powerful stakeholder (This is akin to a Pareto optimal outcome), or (iii) the stakeholders with power act to improve the achievement of their

objectives but this is to the disadvantage of stakeholders who lack the power to take such actions.

Multiattribute decision analysis in the form of value scales and swing weights enable assessments to be made of the extent to which a given stakeholder's objectives would be achieved in a given scenario, taking into account the trade-offs they would be prepared to make between objectives. However, because the focus is on the extent to which an objective would be achieved it is necessary to use global scales with end points of "zero achievement" (scoring 0) and "complete achievement" (scoring 10). Because the ends of the scale are not arbitrary, as in an interval scale, (0 meaning no achievement at all) the scores will be measured on a ratio scale. This raises the question of what would represent the complete non achievement or complete achievement of an objective. Monat (2009) suggests a number of approaches such as experienced extreme values, imagined extremes, aspirational extremes and universal extremes (the worst and best possible values conceivable). Using one of these approaches a company could, for example, estimate its largest possible annual loss as $50 million and its largest possible profit as $60m. When formulating global scales it is important to be aware that overly long scales can be problematical in discriminating between a set of options that have values that occupy only a small part of the range. For example, profits ranging from $2 million to $4 million would have scores that were hardly distinguishable on a scale ranging from -$50 billion to +$50 billion. It is important to assess whether the bounds of the scale represent levels that are realistic and feasible.

In contrast, there are reasons why a scale may occupy too narrow a range. Behavioral decision research indicates that ranges like these are typically underestimated so some extension of them may be necessary after careful thought (Makridakis et al, 2009). Montibeller, and von Winterfeldt (2015) discuss methods that can reduce or overcome this bias. These include eliciting ranges from multiple experts to generate a wide range of perspectives, the avoidance of values that might act as anchors in the estimation process and the use counterfactuals to encourage people to think of reasons why an outcome might lie outside the initially estimated range.

The power that each stakeholder has to implement strategies to improve the achievement of their objectives in a given scenario can also be assessed on a ratio scale with 0 representing no power and 10 representing complete power. Where stakeholders have a range of alternative actions available to improve the achievement of their objectives in a given scenario (and the

power to implement these actions) it helps an assessment to be made of which action they would be most likely to select. Finally, in the equilibrium state, the augmented critical scenario method enables the extent to which all stakeholders will have achieved their objectives to be determined, following the actions of powerful stakeholders.

The stages in the augmented critical scenario method are as follows.

1) Formulate scenarios.
2) Identify stakeholder groupings and the objectives that each wishes to achieve.
3) Obtain a weighted score to determine the extent to which each stakeholder group's objectives are achieved within each scenario (exclude the effect of any potential new actions by stakeholders at this stage). Plot the results.
4) For each stakeholder who has a significant shortfall in the achievement of their objectives in a given scenario, identify strategies available to them (if any) for remedying the situation.
5) For each strategy obtain a new weighted score to determine the extent to which the stakeholder's objectives would be achieved if the strategy was implemented
6) For each strategy rate the relative power of the stakeholder to implement the strategy in the given scenario
7) For each scenario, plot the weighted scores of the strategies against the power rating, and determine the strategy that each stakeholder would be likely to select
8) Identify the consequences of these actions for all stakeholders in each scenario
9) Apply sensitivity analysis to the assessed scores, weights and power ratings.

4. Illustrating the "augmented critical scenario method"

Our illustrative case study builds on Cairns' (2014) analysis of global ship disposal and the Bangladesh ship breaking industry, in which Factors A and B, respectively, are posited as:

- "Effectiveness of global regulation", and
- "Commitment to 'green practices' in Bangladesh".

Four possible and plausible future scenarios for the combination of the extreme outcomes of these are then outlined in terms of:

- "*Global Cooperation*" – effective global regulation combined with internal commitment to change in Bangladesh (A1/B1),
- "*World Divided*" – nominally effective global regulation, but without commitment to enforcement and change within Bangladesh (A1/B2),
- "*Bangladesh Goes Alone*" – the industry in Bangladesh is shut down, but dirty breaking transfers to other least developed countries (LDCs) without global control (A2/B1), and,
- "*Business-as-usual*" – dirty breaking continues unabated (A2/B2).

Building on these outlines, we expand the scenarios through the various stages as follows, with further research from a broad range of sources:

4.1 Stage 1: Formulate scenarios

Our expanded scenario outlines are as follows:

4.1.1 Scenario A: Global Cooperation

In a world of economic and political stability, there is international agreement and action to require disposal of redundant ships by the use of "green" breaking, brought about by the combined actions of a wide variety of stakeholders, across and within nations. At the international level, there is commitment by the International Maritime Organization (IMO), ship builders and owners (cf. NGO Shipbreaking Platform, 2014), insurance brokers, countries of registration, etc. to enforce regulation (cf. NGO Shipbreaking Platform, 2013). At the same time, there is commitment to the prevention of beaching by the governments of India and Pakistan and investment in "green" technologies (cf. Daily Star, 2011), with inward investment and/or international aid as well as local finance for Bangladesh.

4.1.2 Scenario B: A World Divided

Global conditions are characterized by economic and political stability. There is concerted action by environmental pressure groups, ship-owning nations' governments, transnational agencies and others at the supply end of the chain to develop a binding accord that seeks to end to the practice of beaching. This prevents major international shipping companies from selling off ships without retaining control over their final dismantling (cf. Recyclingportal.eu, 2009). Bangladesh, however, fails to take action to close down its yards (cf.

Huda, 2012) and over time the yards dismantle a diminishing supply of older and smaller ships from unregistered sources in countries outside of the accord.

4.1.3 Scenario C: Bangladesh Goes Alone

The global economic and political environment remains turbulent but, under pressure from both international NGOs and local pressure groups such as Young Power for Social Action (YPSA) and the Bangladesh Environmental Lawyers Association (BELA), the Bangladesh government commits to legislation to ban the beaching and dismantling of ships (cf. Daily Star, 2012; NGO Platform on Shipbreaking, 2009). However, despite court orders to the contrary (cf. Greenpeace/FIDH, 2005), redundant ships continue to be beached for breaking in India, whilst Pakistan turns a blind eye, and new operations start up in Africa. With the IMO remaining a "toothless tiger" (IMO, 2004) and registration states showing no desire to intervene, the practice of beaching persists in its worst form in these other locations.

4.1.4 Scenario D: Business as Usual

Nothing changes in a world in economic and political uncertainty. There is an expressed desire by many to put an end to beaching and dirty breaking, but there is no effective international or local framework to prevent it.

4.2 Stage 2: Identify stakeholder groupings and the objectives that each wish to achieve in their strategic actions

In this section, we address the objectives of three illustrative stakeholder entities, in order to open debate on their interaction with one another. Whilst our framework is designed to address the full stakeholder constituency, here we restrict our illustration to three stakeholders for reasons of space and simplicity. We recognise that the wider stakeholder constituency includes those who have complex and perhaps ambiguous objectives and options and consider the possibilities of more complex and inclusive modelling in our later discussion.

The following stakeholder outlines are based on fact and literature but should not be identified as real individuals or organizations that exist in the present or past:

a)   *GlobeTrade*: a global shipping company with the key objective of remaining competitive and providing a return to stockholders in a market that is subject to volatile financial and international trade conditions. However, the company is mindful of environmental pressures

within Europe and the US and possible negative reputation risk factors that might influence its institutional stockholders. It considers its CSR options in the context of different external market conditions across scenarios.

Figure 2 displays a possible mean-ends objectives network for *GlobeTrade*. The company has two fundamental objectives at the top of the network. The lower–level objectives show how the higher levels objective can be better achieved (Keeney, 1992). The arrows show the direction of influence. For example, maximising the number of efficient new ships in the company's fleet, will serve to minimize emissions and help to minimize the negative effects of the company's activities on the environment. However, more new ships in the fleet will also mean that more older ships need to be broken. The process of structuring diagrams like this should help an analyst to identify gaps where a stakeholder's objectives may have been inadvertently omitted (Bond et al., 2008). The risk of inadvertent omission of objectives can by reduced by subsequently challenging people to extend their list of objectives and combining lists generated independently by individuals in the planning team (Bond et al., 2010). Ideally, the objectives that are eventually identified should meet the criterion of mutual preference independence for the stakeholder group. After several iterations two objectives are identified for *GlobeTrade*: (i) maximise financial returns, and (ii) minimise pollution from 'dirty' ship breaking.

b)   *GreenWorld*: a single issue international environmental NGO with the fundamental objective of minimising the shipping industry's damage to the environment. It thus has a non-negotiable means objective of minimizing dirty ship breaking. It proclaims its CSR agenda as being the common good and it will operate in any way within, and sometimes outside legal frameworks using direct action and political manoeuvring.

c)   *Workers*: those who provide labour in one of the major yards in Bangladesh. The workers have the fundamental objective of maximising the welfare of their families who mostly live in the rural hinterland of northern Bangladesh where there is little or no opportunity for employment and no state support. Their means objectives are (i) to maximise their family's income (ii) to minimise risk to their own health and safety (being aware of the atrocious safety record of the industry) and the future of their own children, with the reliance on child labour in the yards at present (FIDH/YPSA, 2008). However, the 'health and safety' means objective takes a 'back seat' to maximising income as their main concern is "jobs at all costs" (cf. Daily

Star, 2009). (For brevity a means-ends objectives network is not displayed for this stakeholder group.)

INSERT FIGURE 2 ABOUT HERE.

4.3 Stage 3: Obtain a weighted score to determine the extent to which each stakeholder group's objectives are achieved within each scenario

GlobeTrade estimates that its possible annual returns (measured as profit) could range between a loss of $15million and a profit of $180 million. These are assigned values of 0 and 10 on the global scale for returns. Profits are then estimated for each scenario and assigned a score based on their distance between -$15 million and $180 million. Linear value functions have been assumed here for simplicity. Edwards and Barron (1994) found that these were an accurate approximation to non-linear value functions, unless the non-linearity was such that the ratio of the steepest slope to the least steep was greater than 2.5.   However, Stewart (1996) indicated, on the basis of simulations, that multiattribute value models can be sensitive to the shape of the constituent value functions. This may particularly be the case where long scales are associated with global value functions. When linearity cannot be assumed, methods such as bisection (e.g. see Goodwin and Wright, 2014, p.43) can be used to elicit the required values. For 'dirty ship breaking' the gross tonnage of the company's ships broken in this way per year is estimated to range from 0 to 1.5 million. These are assigned values of 10 and 0, respectively on the global scale for gross ship tonnage broken. The estimated number that would be broken in each scenario is then mapped on to this scale. Table 1 shows the scores obtained. Note that, in the case of objectives for which there is no natural numeric scale (e.g. company image or reputation), scores can be assigned directly onto the scale to show how a stakeholder's preference for a given outcome compared to the worst and best possible outcomes.

INSERT TABLE 1 ABOUT HERE.

For example, the best financial returns are obtained in the Business-as-Usual scenario, though this is only 80% of what the company would regard as its best conceivable profit, and the worst under Global Cooperation. *GlobeTrade*'s preferences for a swing between the worst and best possible position in each objective are compared, that is an improvement in annual profit from -$5 million to $180 million is compared with an improvement in the deadweight tonnage of

ships broken under dirty conditions from 1.5 million to zero. The swing on the financial returns objectives is the most preferred so this is assigned a 'raw' weight of 10. A swing on the ship breaking objective is considered only 2/3 as preferable yielding a raw weight of 6.67. These weights are then normalized by dividing by their sum (16.67) to yield weights of 0.6 for 'returns' and 0.4 for 'ship breaking'. These weights are multiplied by the scores to give weighted average scores that show the relative extent to which *GlobeTrade* meets its objectives in each scenario. The results are shown in Table 2. Comparing these to the maximum value of 10 indicates that that *GlobeTrade* would be dissatisfied in all scenarios, particularly World Divided.

INSERT TABLE 2 ABOUT HERE.

Table 3 shows the weighted scores for all stakeholders. These have been obtained using a similar process to that used for *GlobeTrade*. Note that *GreenWorld* will be extremely dissatisfied in the Business-as-Usual as scenario, while the *Workers* see their interests as best served in this scenario.

INSERT TABLE 3 ABOUT HERE.

4.4 Stage 4: For each stakeholder who has a significant shortfall in the achievement of their objectives in a given scenario, identify strategies available to them (if any) for remedying the situation.

For *GlobeTrade*, the strategic options to remain competitive in volatile trading conditions, but with secondary consideration of the CSR/environmental agenda and its possible consequences are posited as:

a) Order new efficient ships and dispose of old ships directly to "green" breakers,
b) Order new efficient ships and dispose of old ships on an open market through third-party agents, seeking guarantees of "green" disposal. These, however, have been shown to be unenforceable internationally and often unenforced locally (cf. Government of India, 2009; IMOWatch, 2010; USEPA, 2009[2]),

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[2] The references here relate to the illegal export of the former cruise ship *Oceania* from the United States, its arrival at Alang in India under the name *Platinum ll* and its eventual beaching and breaking there despite court orders forbidding its import and beaching.

c) Keep ships until end of viable life then dispose of them on open market, most likely to end life on dirty beaches under current prevailing conditions.

For *GreenWorld*, with its no-compromise focus on a closure agenda, we posit a single strategic option; that is, to advocate for green ship breaking globally and the closure of all dirty beaching yards. Finally, we see the *Workers* as having no real strategic options, other than continuing with the status quo. We have assumed here that strategies can be applied in different scenarios. In some cases, a completely different set of strategies may be applicable in each scenario.

4.5 Stage 5: For each strategy obtain a new weighted score to determine the extent to which the stakeholder's objectives would be achieved if the strategy was implemented

Only *GlobeTrade* has multiple strategies available to it. Table 4 shows the effectiveness of each strategy (measured, as before, on the 0 to 10 global scale) in achieving each objective in each scenario. Note that these scores reflect the conditions that exist within each scenario and the likely actions of other stakeholders within that scenario. Actions by *GreenWorld* against *GlobeTrade* if it pursues the strategy of keeping ships to the end of their life are not thought to influence significantly *GlobeTrade*'s returns in this scenario though their actions may reduce the probability of this strategy being adopted in the first place (see Stage 6).

INSERT TABLE 4 ABOUT HERE.

The swing weights that were derived earlier are applied to these scores to obtain the weighted scores in Table 5. These indicate that under the scenario of Global Cooperation, *GlobeTrade* would have no choice but to order new efficient ships and dispose of old ships directly to "green" breakers. It would also prefer to follow this strategy in the World Divided and Goes Alone scenarios, though in the latter case there is some uncertainty as keeping ships until the end of their life and then disposing of them on the open market is almost as attractive. Under Business-as-Usual it would clearly prefer to keep ships until the end of their life.

INSERT TABLE 5 ABOUT HERE.

The scores, from 0-10, may be read as addressing Flyvbjerg's (2003) second question: "Is this development desirable?"

4.6 Stage 6: For each strategy rate the relative power of the stakeholder to implement the strategy in the given scenario

While stakeholders may have strategies that they would most wish to pursue they may not always have the power to pursue them. Factors inherent in a given scenario, such as market conditions, and the potential actions of other stakeholders or regulatory bodies, such as governments, may restrict the probability that a given strategy can be pursued in a given scenario. For each scenario we therefore estimate a power index to reflect the probability that a given strategy will be implementable in a particular scenario. This index is measured on a 0 (zero probability) to 10 (certainty) ratio scale. Note that the probability of being able to implement a strategy is to be distinguished from the success, or otherwise, of achieving one's objectives through that strategy. The latter is already reflected in the weighted scores in Table 5.

We expect that, in scenarios like World Divided , Goes Alone, and Business-as-Usual, *GlobeTrade*'s ability to pursue strategy 'a' (ordering new efficient ships and dispose of old ships directly to "green" breakers) would be threatened by the actions of competitors who, could undercut its shipping rates by pursuing a 'less green' strategy. Thus, for example in the Business-as-Usual scenario we estimate that the there is only a 4/10 probability that they would consider this strategy to be feasible. Similarly, pressure groups like *GreenWorld* could imperil *GlobeTrade*'s ability to pursue strategy 'c' (keeping ships to the end of their life) through actions intended to adversely affect the company's reputation. Hence in the Business-as-Usual scenario this strategy would only have 7/10 probability of being pursued by the company even though this strategy has the highest weighted score in that scenario. *GreenWorld* is able to continue its advocacy for green ship breaking globally and the closure of all dirty beaching yard in all scenarios and hence has a power score of 10/10 in all cases. The probability of the workers being able to pursue their strategy of protecting the welfare of their families is entirely dependent upon the power, interests and actions of others. In the Global Cooperation and Goes Alone scenarios, most if not all will lose their jobs and, hence, their only power source, that of their physical labour. However, in the World Divided scenario, they maintain some degree of power over the ability to provide their labour in the near future. In the Business-As-Usual scenario, with the industry status quo maintained, their labour is their source of power. Table 6 shows the power ratings for each scenario, together with the scores for each strategy.

INSERT TABLE 6 ABOUT HERE.

4.7 Stage 7: For each scenario, plot the weighted scores of the strategies again the power rating, and determine the strategy that each stakeholder would be likely to select

The results of this exercise are shown in Figure 3. It can be seen that in the Global Cooperation scenario the actions of the stakeholders are well defined. The *Workers* have no power to continue the status quo and both *GlobeTrade* and *GreenWorld* are able to pursue their single available strategies. In World Divided, *GlobeTrade* is most likely to pursue strategy a: "Order new efficient ships and dispose of old ships directly to green breakers" as this has the highest score and they also have the highest probability of implementing this strategy. Under the Goes Alone scenario there is some uncertainty as to whether they would pursue strategy 'a' or 'b', as the former has the highest score but the latter has a greater probability of being implementable. Under Business-as-Usual they will probably pursue c: "Keep ships until end of viable life then dispose of them on open market" as this yields the highest score and has the greatest possibility of being implemented.

INSERT FIGURE 3 ABOUT HERE.

4.8 Stage 8: Identify the consequences of these actions for all stakeholders in each scenario.

Next, we consider the level of achievement of stakeholders' objective from the present day to the future outlined in each scenario, providing a response to the first part of Flyvbjerg's (2003) fourth question – "Who gains and who loses?". Note that direct comparison of the levels of satisfaction achieved by different stakeholders in a given scenario is not possible. A swing from a weighted score of 0 to 10 may bring more satisfaction to one stakeholder than another. Hence we can only consider the extent which given stakeholders gain or lose in different scenarios.

In considering our stakeholders individually, we can see that *GlobeTrade*, with its different strategic options, has more opportunity for achieving its objectives to a great extent across all scenarios through varying its selected option to meet the different economic and trading conditions that it faces, but with compromise on any CSR agenda. At the same time, the single issue *GreenWorld* has a much clearer gain/lose divide across scenarios. Relative to these global

entities, the *Workers* are shown to be much more in a position of losing, particularly in relation to a focus on the key objective of maintaining livelihood, which is presented as a win situation only in the Business-As-Usual (D) scenario.

4.9 Stage 9: Apply sensitivity analysis to the assessed scores, weights and power ratings.

Because the scores, weights and power ratings are subjective estimates it is advisable to investigate how robust the indications of the model are to changes in these values. Also when a team is making the assessments there may be disagreements between individual members and it useful to investigate the extent to which these differences would have an impact on the conclusions drawn from the model. One question is whether there are circumstances where *GlobeTrade* would be likely to pursue the 'greenest' strategy (a) in the Business-as-Usual scenario. This would be likely to be the case if this strategy was placed to the 'north-east' of the *GlobeTrade*'s other strategies in the Business-as-Usual chart in figure 3. To achieve this, the power to implement this strategy would have to increase from 4 to above 7 and the normalized weight placed on minimising dirty ship breaking would have to increase from 0.4 to greater than 0.5 (see figure 4). Thus only a slight change in the weights could lead to the pursuit of this strategy. However, increasing the power to implement it might pose more of a challenge, with likely market conditions of high competition and costs combined with over-capacity and low sea freight rates.

INSERT FIGURE 4 ABOUT HERE.

5. Implications of the analysis

Our framework enables consideration of complex, inter-stakeholder relationships and the impact of strategic decision-making in support of, or in conflict with, the objectives and aspirations of others. Here, developing our illustrative case study, we focus specifically on decisions informed by organizations' considerations of corporate social responsibility and the potential impacts of these decisions on remote stakeholders.

As we have indicated for *GlobeTrade*, multinational companies (MNCs) can most likely pursue alternative strategies. These will be informed and constrained by internal priorities and external factors: prevailing economic and trading conditions, international legal frameworks, political decisions and, to some extent, societal pressures. For example, under turbulent global

trading conditions, *GlobeTrade* may be inclined towards a symbolic rather than substantive commitment to CSR (Perez-Batres et al., 2012). In addition, if global regulatory frameworks remain weak or non-existent (cf. Recyclingportal.eu, 2012), then there are no real grounds for concerned stockholders to exert pressure for substantive commitment. However, there is precedent for international NGOs like *GreenWorld* pursuing aggressive strategies that force alternative approaches by MNCs, as with Greenpeace's engagement with Shell in relation to the Brent Spar oil platform (cf. Kirby, 1998). Across scenarios, depending upon the specific economic, political, social and regulatory frameworks that exist, we see major organizations setting strategies that are both responsive to different futures for their own benefit and setting the ground for how others will be impacted within these different scenarios. However, as we posit for the Bangladesh *Worker* stakeholders, other stakeholders may have little or no capability to set strategy. At the same time, they may have aspirations that will either be met or destroyed by the actions of others.

This brings us back to consideration of Flybjerg's third question – "What, if anything, should we do about it?" Here, we turn to consideration of the interplay between one group's strategy and another's future, looking first at the Global Cooperation (A) scenario. Here, Figure 2 indicates that both *GlobeTrade* and *GreenWorld* have achieved high weighted scores, with *GlobeTrade* having done so through pursuing its first choice strategic option that both generates stockholder return and follows a CSR/environmental agenda of common good. The external conditions are such that economic and political stability supports collaboration and cooperation across organizations and agencies. However, for the *Worker* group; with members who have no employment contracts, no security of employment, no trade union support and no real options for alternative employment; "jobs at any cost" is the key objective. Here, the *Worker* group are losers, compared to the outcome received under the Business as Usual (D) scenario, with the closure of the dirty breaking yards and, as a result, the loss of most of the associated jobs. Notice, however, that the Global Cooperation (A) scenario represents "equilibrium" state (iii) – see our earlier discussion in Section 3.3.

In the Global Cooperation scenario then, the "good" intentions of *GlobeTrade* and *GreenWorld* lead to unintended consequences of loss of livelihood. Unless there is associated investment in new "green" breaking yards in Bangladesh and; since these would be unlikely to employ the same complement of workers; other investment in new forms of job creation, the *Workers* will likely remain absolute losers. Broadening our deliberations where all stakeholders are considered, we might posit that to raise the *Workers* out of the loser category would require the exercise of power by the Bangladesh government. However, the domain of power of the

government of one of the world's poorest countries is limited beyond its own boundaries. As such, it would require collaboration with and support from organizations and governments with broader economic and political power to bring necessary investment to build employment opportunities.

In the Business-As-Usual (D) scenario (Figure 3), *GreenWorld* is shown as a complete loser in relation to its single cause and objective whilst, here, *GlobeTrade's* success in a weak economy and global market rests upon its focus on financial measures only, and withdrawal from any effective CSR/environmental agenda for ship disposal. If, however, *GlobeTrade* wishes to follow strategy (i) of ship replacement and green disposal within a scenario of Business-As-Usual for others, then it must do so by seeking to exercise its power in order to influence others to steer the future away from this scenario and towards the Global Cooperation scenario. However, it must do this under poor market conditions.

As we see, *GlobeTrade* has strategic options, but ones that require it to make decisions between objectives that are in opposition to each other in this scenario. If the company chooses to act for broad social, sustainability reasons rather than purely its own narrow financial purposes, then the latter aim; and the primary objective of competitiveness; will be compromised. We see here that *GlobeTrade* has options within this scenario whilst *GreenWorld* is seen to lose out. However, the Bangladesh *Workers'* desire for jobs at any cost is met only in this scenario. Here the group has power to maintain the status quo, and to achieve its primary objective, through possession of its own physical labour which remains in demand on the beaches.

Similar tensions and issues can be identified between stakeholders across the remaining two scenarios, dependent upon which strategic options are pursued. The Bangladesh Goes Alone scenario shows a future in which the nation's government has exercised power to close down the industry (cf. Daily Star, 2012). However, the government's power does not transcend national boundaries, and no similar action is taken within other key jurisdictions of India and Pakistan. Here, we must consider the power differentials between nations, agencies and organizations across the supply chain, and the extent to which any one can bring about meaningful change acting on its own.

As in our example, with most such issues the interplay between stakeholder groupings will be complex and dynamic. Stakeholders that are, at one point, set in the background may be using their influence to build pressure that precludes the enactment of particular strategies by other actors. Ackermann and Eden (2011) provide a useful approach to identifying and analysing situations where one stakeholder's actions can generate a dynamic set of responses across a

range of other stakeholders. Their "Stakeholder Influence Network" plots visually the formal and informal relationships between stakeholder groupings, providing insights into the degree to which a focal organization's actions are likely to be monitored by other specific stakeholders – by considering which of the specific stakeholder's goals might be attacked or endangered by a particular strategy or action. In our framework, considering every stakeholder's position relative to other stakeholders' prompts questions on the nature and relationships of power, on what if anything should be done about it, and on who gains and who loses as a result of decisions made.

6. Discussion

The framework of augmented CSM, that we have proposed and illustrated here, has the potential, when applied to considerations such as CSR, to enable democratic conversation on what is a complex and conflicted situation (Miles et al., 2006). Incorporating global scales for the level of achievement of key objectives and for the power for different stakeholder groups to pursue strategies designed to enhance the extent to which objectives are achieved, the model permits a dynamic evaluation of positions. It thereby enables a more nuanced analysis of the status of individual stakeholder groupings relative to each other within and across multiple future scenarios (see Table 7). Critically, the design of the method takes into account the need to provide a modelling framework that mitigates the cognitive biases that would likely to be associated with unstructured strategic choice.

INSERT TABLE 7 ABOUT HERE.

Our approach supports consideration of the choices that some organizations have between different CSR agendas – ranging from the symbolic to the substantive – the impacts of choice on other stakeholders, and the role of power and pressure in determining choice and outcome (Perez-Batres et al., 2012). It incorporates the core elements of both scenario-based decision analysis and critical scenario method (CSM) that have established foundations, respectively, in the literature on systematic strategy analysis (Goodwin and Wright, 2001, 2014) and application of Aristotelian *phronēsis* as a mode of social inquiry (Flyvbjerg, 2001, 2003).

As indicated earlier our modelling framework is designed to be accessible to decision makers and planners from all backgrounds and, as such, involves a number of compromises most of which can be overcome at the cost of additional complexity. First, the swing weights are assumed to be constant across all scenarios. In many cases this is likely to be a reasonable

assumption. For example the trade-off between increased financial returns and more pollution may not depend on which scenario is being considered. In other cases, for example, where the scenarios include different levels of cultural or political tolerance of pollution, weights specific to each scenario may need to be elicited (Montibeller et al., 20061). Similarly, as presented, our framework assumed that stakeholders had objectives that were applicable across all scenarios. In some cases different objectives may apply in different scenarios.

Our power indices assumed that we could determine the probability of prevailing with a given strategy in the light of the action of other stakeholders. This itself assumes that a stakeholder has both the political acumen and the will to exercise their power to pursue a strategy when it is in their interests to do so (the 'skill and will' Mintzberg, 1983) In some situations the reaction of other stakeholders might itself be uncertain so that we may, for example, have a 0.8 probability of prevailing if they employ strategy A and a 0.4 probability if they employ strategy B. This situation could simply be displayed as two separate points on figure 2 to inform any discussion that is being supported by the model. Alternatively, the application of game theory may point to a state of equilibrium between the stakeholders, possibly indicating that each party would have complete power to pursue a particular strategy, given the reaction of the other (c.f. Dixit and Skeath, 1999). Similarly, if *GreenWorld* had alternative strategies available these might impact *GlobeWorld*'s weighted scores to different degrees. Again a game-theory matrix could be used here to display how the weighted scores depended on the interaction of the strategies of the opposing stakeholders and possibly be used to identify equilibrium.

In addition, the strategies were assumed to be discrete and mutually exclusive. The implementation of strategies along continua is possible (for example, *GreenWorld* might decide to assign resources anywhere between $50m and $100m to contesting dirty ship breaking) as are mixtures of strategies (e.g. commission a few new ships and send two-thirds of decommissioned ships to the green breakers and a third to the open market). These could be most easily represented within the framework by a few selected 'discrete' strategies (e.g. *GreenWorld* assign resources of $50, $75 or $100m) which should be sufficient to inform the conversation that the model is supporting.

Finally, the modelling framework assumes that the axioms of multiattribute value theory are valid in situations where it is being applied, that mutual preference independence applies to all stakeholders (c.f. Goodwin and Wright 2014, p.52) and that stakeholders will behave rationally in that they will choose the strategy that maximises their weighted score in cases where the power to implement different strategies is equal.

The scales presented for power and achievement of objectives are, of course, our own value-laden assessments of the positions of others with information accessed through secondary sources. However, as discussed earlier, approaches like this have been successful in supporting preparations for negotiations with other parties. Moreover, our assessments are based upon in-depth knowledge of the literature on ship disposal and of key decisions and actions across the global and Bangladesh contexts. Whilst acknowledging our own subjectivity in this particular illustrative case study, in the application of the method in the practice arena there is the opportunity for in-depth research and analysis of the focal issue from multiple perspectives, and for live engagement with stakeholders in undertaking the scenario construction and developing the various indices. By raising questions about the interests and relative power of key stakeholders the application of augmented CSM will provides guidance on what information needs to be gathered and where in-depth research needs to be directed.

Where it is not possible to engage the entire stakeholder constituency – which would be the likely situation for our issue no matter what the time and resources available – we advocate either engagement of legitimate proxy groups, or consideration of role-play of excluded groups by active participants. It has been shown that, even where participants have no first-hand experience of the lives of others, role-play can enhance the quality of the valid prediction of stakeholders' actions – beyond mere information gathering (Green and Armstrong, 2011). This approach is equally applicable in the classroom where our analytic framework can be used as a mode of action learning.

Notwithstanding the insights derived from role-play, since our method can be used in a team-based context – where individual members' evaluations of stakeholders': (i) key objective achievement, and (ii) degree of power are explored and evaluated – it is possible that there will be differences of opinion. It may be that minor differences in such evaluations have little impact on the outcome of the interplay between actors and a particular unfolding future. However, more substantial differences in the evaluations must be addressed, since these may indicate very different scenario out-turns and, as such, these out-turns are sensitive to the team members' evaluations. In these circumstances, further analysis and discussion must be undertaken in order to bring a resolution of the identified sensitivities.

We recently taught our analytic method within an Executive MBA course on strategy. Following introduction to the method in a group problem-based learning workshop, participants selected a key issue facing their own organizations to undertake individual analysis. There were informal comments that the nine-stage method was time-consuming but that it was clear and easy to follow. Also, informal feedback indicated that the subjectivity of dealing with multiple

stakeholders was both challenging and insightful. Our model requires that students identify remote but impacted, rather than merely immediate and involved stakeholders. For many, this was an exercise not considered by their organizations and, for some, one that raised ethical questions that challenged the basic assumptions of the business model. It would be straightforward, in such teaching contexts, to include attitudinal measurements of the perceived value of the stakeholder analysis component relative to other components that provide structure to the analysis of an organisation's business environment.

In our view, future research would best be employed to evaluate decision makers' experiences of using the method in different contexts and also address the importance of the limitations identified above, together with methods for overcoming them. For example, to what extent would making swing weights specific to particular scenarios add to the complexity of the method and potentially reduce its acceptability to users? How could game theory matrices best be integrated with the method, when the weighted scores of stakeholders depend on the interaction of their strategies, without sacrificing the method's tractability? Our application in the MBA classroom, outlined above, was within a stand-alone course which also provided the students' first introduction to scenario methods and for which feedback was informal. Future iterations could incorporate more formal subjective evaluation under conditions of ethics approval. Further, some of the possibilities we outline here for evaluation of our model against other approaches might be tested and evaluated in a more controlled teaching environment. For example, where students are introduced to the theory and use of scenario methods at the outset of their study program (cf. Bradfield, Cairns & Wright, in press), they might then be required at a later stage to evaluate decisions in response to the same basic scenario problem using the alternative approaches outlined above.

Overall, our analytic framework is designed to enable a more complex and nuanced engagement with the "multiple realities" (Beech and Cairns, 2001) of stakeholder worlds. As such, it extends the possibilities of decision analysis in relation to strategic options across multiple scenarios and beyond the single organization's field of interest (cf. Wright and Cairns, 2011), to incorporate broad stakeholder (Freeman, 1994) engagement and analysis.

7. Concluding remarks

Strategic planning in an uncertain and volatile world, where there are multiple stakeholders with multiple objectives is likely to be complex. There is evidence from behavioral

decision research that, when faced with this complexity, unaided decision makers can be subject to cognitive biases because of their inability to simultaneously process all the information required. Our aim is this paper has been to present a structured approach that allows decision makers to address the full range of issues and relationships that are pertinent in a given situation enabling them to gain new insights and a deeper understanding of their strategic options, taking into account the likely behavior of key actors if different futures prevail. Our step-by-step method analyses the interplay between stakeholders who have both different values and objectives and also differing degrees of power to act to achieve their objectives within an unfolding set of events. As such it facilitates engagement with complex and conflicted situations and provides an aid to subsequent decision-making – whether based upon a CSR agenda, as here, or on an instrumental firm-centric rationality.

We propose that our method has potential value both in the classroom and the boardroom; as a means of exploring complex business issues and assessing strategic options; and in broad society, for engaging with an analysis of the impact of organizational strategy and action across all stakeholders. In situations where there are overarching stakeholders with virtually complete power within their own domains, like governments, the framework also has potential value in identifying where interventions might be necessary to protect stakeholders who lack the power to resist exploitation or harm.

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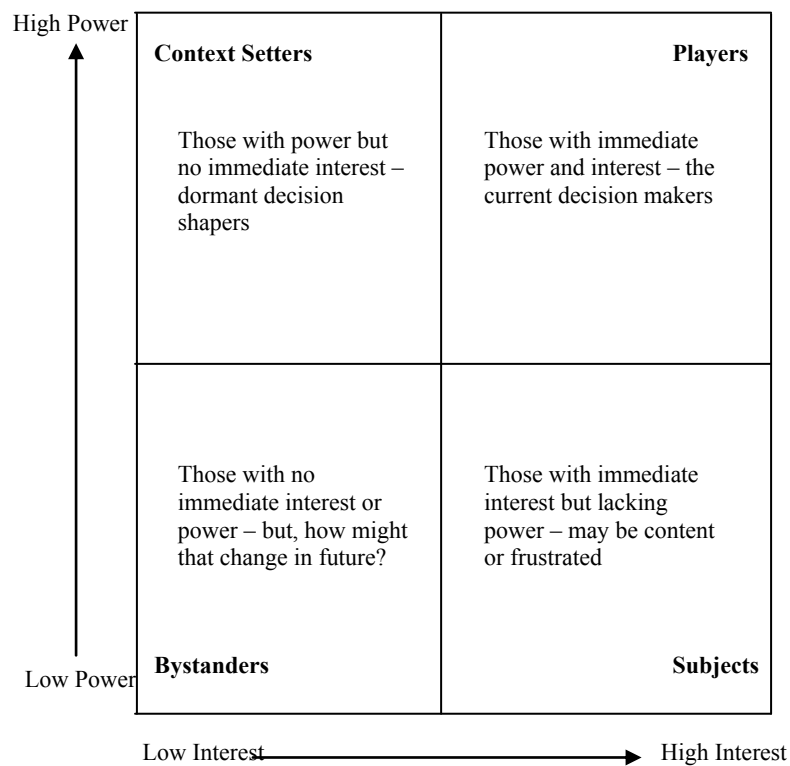
High Power

Context Setters Those with power but no immediate interest – dormant decision shapers	**Players** Those with immediate power and interest – the current decision makers
Those with no immediate interest or power – but, how might that change in future? **Bystanders**	Those with immediate interest but lacking power – may be content or frustrated **Subjects**

Low Power

Low Interest ⟶ High Interest

Figure 1. Stakeholder matrix (based upon Wright and Cairns, 2011: 92[3])

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[3] ***Note****: In relation to our discussion of "key objectives", those with low interest may be read as having no immediate objective to pursue in the present. However, within the dynamics of unfolding futures, they may have interests to move to protect under certain future scenarios.*
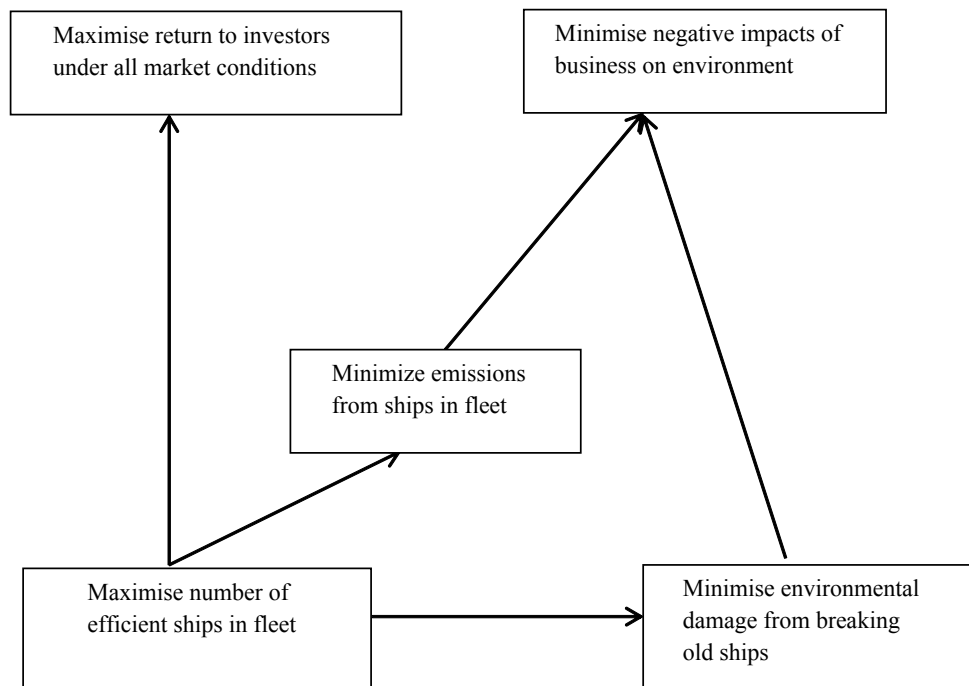
Figure 2. A provisional mean-ends objectives network for *GlobeTrade*

Objective	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
Maximise returns	3	4	6	8
Minimise dirty ship breaking	10	3	2	0

Table 1.   Scores for *GlobeTrade* for each objective in each scenario

	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
Weighted score	5.8	3.6	4.4	4.8

Table 2.   Weighted scores for *GlobeTrade* for all objectives in each scenario

Stakeholder	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
GlobeTrade	5.8	3.6	4.4	4.8
GreenWorld	10.0	6.6	4.6	0.0
Workers	4.5	1.8	0.9	9.1

Table 3.   Weighted scores for each stakeholder in each scenario

Objective: Maximise returns

Strategy	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
a) New ships & green breakers	7	6	4	0
b) New ships & open market disposal	n/a	3	4	6
c) Keep ships until end of life	n/a	n/a	8	10

Objective: Minimise dirty ship breaking

Strategy	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
a) New ships & green breakers	10	10	10	10
b) New ships & open market disposal	n/a	4	4	0
c) Keep ships until end of life	n/a	n/a	2	0

Table 4.   Scores *for GlobeTrade*'s strategies on each objective in each scenario

	A – Global Cooperation	B – World Divided	C - Goes Alone	D - Business-As-Usual
a) New ships & green breakers	8.2	7.6	6.4	4.0
b) New ships & open mkt disposal	n/a	3.4	4.0	3.6
c) Keep ships until end of life	n/a	n/a	5.6	6.0

Table 5. Weighted scores for *GlobeTrade*'s strategies in each scenario

Global cooperation	Power	Score	Comment
GlobeTrade a	10	8.2	
GreenWorld	10	10.0	
Workers	0	4.5	Most jobs lost with no other options
World divided	**Power**	**Score**	**Comment**
GlobeTrade a	8	7.6	Power restricted by competition
GlobeTrade b	7	3.4	Power restricted by competition
GreenWorld	10	6.6	
Workers	2	1.8	Reducing no. of jobs over time
Goes alone	**Power**	**Score**	**Comment**
GlobeTrade a	6	6.4	Power restricted by competition
GlobeTrade b	7	4	Power restricted by competition & pressure groups
GlobeTrade c	5	5.6	Power restricted by pressure groups
GreenWorld	10	4.6	
Workers	0	0.9	Most jobs lost with no other options
Business-as-usual	**Power**	**Score**	**Comment**
GlobeTrade a	4	4	Power restricted by competition
GlobeTrade b	4	3.6	Power restricted by competition & pressure groups
GlobeTrade c	7	6	Power restricted by pressure groups
GreenWorld	10	0	
Workers	8	9.1	Power only of supplying labour

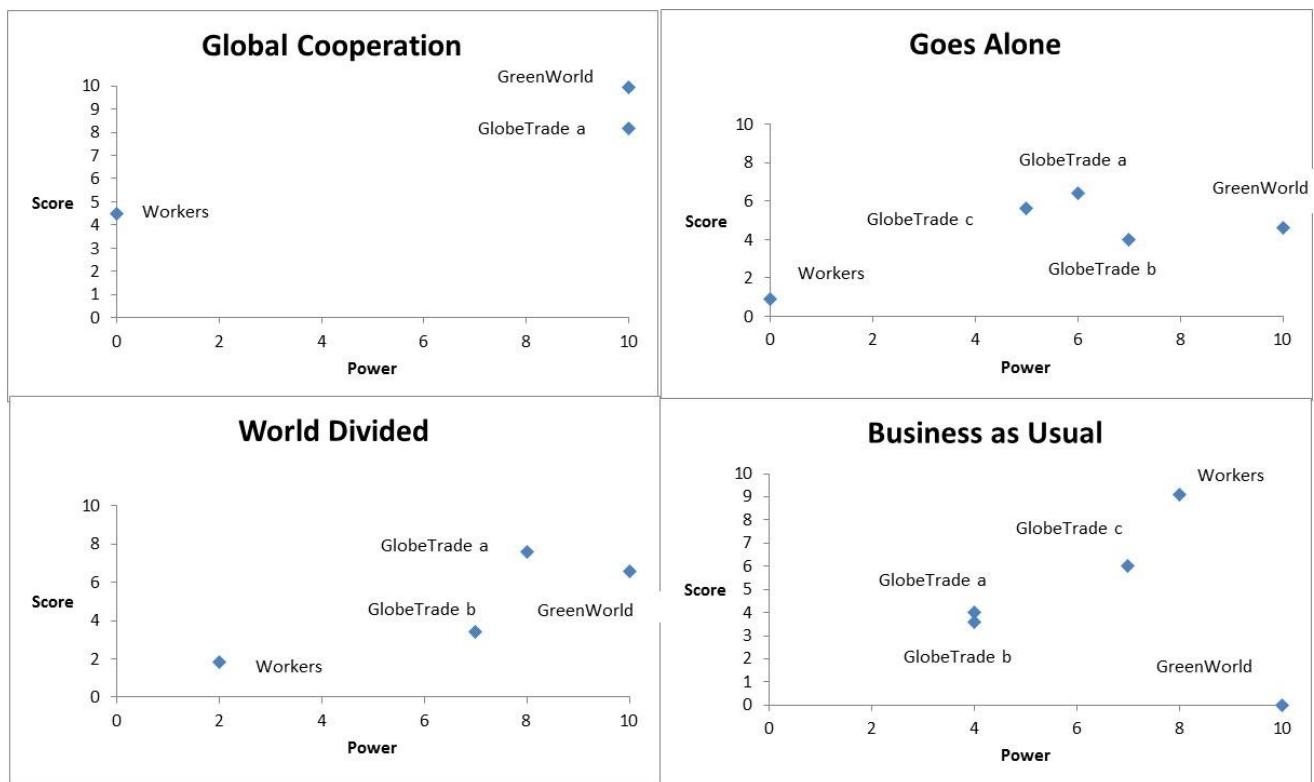**Table 6. Power ratings and weighted scores in each scenario**

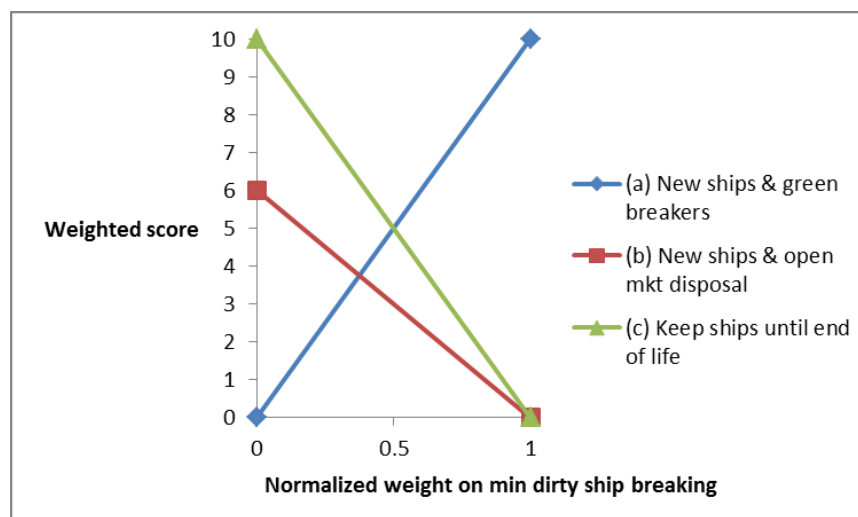**Figure 3. Scores and power ratings of stakeholders in the four scenarios**

Figure 4. Sensitivity analysis for *GlobeTrades*' strategies in the Business-as-Usual scenario

	Basic CSM	Augmented CSM
Stakeholder Evaluation	Qualitative assessment of the power and objectives of each stakeholder	Formal structured quantitative assessment of (i) the amount-of-power and (ii) the degree-of-achievement of objectives, by each stakeholder
Stakeholder Position	"Audience" – the analysis assumes a static positioning of each stakeholder to unfolding events in the external environment	"Actors" – each stakeholder may be active or passive in response to unfolding events in the external environment, some stakeholders have the option of influencing those events and their outcomes
Temporal Analysis	Simple winner/loser evaluation of the relative positioning of each stakeholder after each scenario unfolds	Dynamic evaluation, over time, of the power/objectives-achieved positioning of each stakeholder within each unfolding scenario

Table 7. Comparative features of "basic CSM" and "augmented CSM"