



Contents lists available at ScienceDirect

## European Journal of Operational Research

journal homepage: [www.elsevier.com/locate/ejor](http://www.elsevier.com/locate/ejor)

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

George Cairns<sup>a,1,2</sup>, Paul Goodwin<sup>b,3</sup>, George Wright<sup>c,\*</sup>

<sup>a</sup>School of Management, RMIT University, Melbourne, Australia

<sup>b</sup>School of Management, University of Bath, Claverton Down Rd, Bath, BA2 7AY, UK

<sup>c</sup>Department of Strategy and Organisation, Strathclyde Business School, University of Strathclyde, Livingstone Tower, Richmond Street, Glasgow, G1 1XQ, UK

### ARTICLE INFO

#### Article history:

Received 15 November 2014

Accepted 11 July 2015

Available online xxx

#### Keywords:

Strategic planning

Ethics in OR

Decision processes

Scenario method

Education

### 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, organisational and cultural boundaries. Whilst strategies can be developed by individual organisations that consider the interests of others – for example in consideration of an organisation'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.

© 2015 Elsevier B.V. and Association of European Operational Research Societies (EURO) within the International Federation of Operational Research Societies (IFORS). All rights reserved.

### 1. Introduction

Scenario analysis has long been recognised as a tool for strategic analysis by organisations (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 characterisations 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 organisation has multiple objectives. The approach reflects the need to overcome the cognitive biases that have been identified in behavioural 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 & Wright, 2001; Montibeller, Gummer, & Tumidei, 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 & 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

\* Corresponding author. Tel.: +44 (0)141 548 3940x3940.

E-mail addresses: [george.cairns@qut.edu.au](mailto:george.cairns@qut.edu.au) (G. Cairns), [P.Goodwin@bath.ac.uk](mailto:P.Goodwin@bath.ac.uk) (P. Goodwin), [george.n.wright@outlook.com](mailto:george.n.wright@outlook.com), [george.wright@strath.ac.uk](mailto:george.wright@strath.ac.uk) (G. Wright).

<sup>1</sup> George Cairns is now Adjunct Professor at QUT Business School, Z Block, Level 9, Queensland University of Technology, 2 George Street, Brisbane, Qld 4000, Australia.

<sup>2</sup> Tel.: +61 (0) 416 514 560.

<sup>3</sup> Tel.: +44 (0) 1225 383549.

<http://dx.doi.org/10.1016/j.ejor.2015.07.033>

0377-2217/© 2015 Elsevier B.V. and Association of European Operational Research Societies (EURO) within the International Federation of Operational Research Societies (IFORS). All rights reserved.

Please cite this article as: G. Cairns et al., A decision-analysis-based framework for analysing stakeholder behaviour in scenario planning, European Journal of Operational Research (2015), <http://dx.doi.org/10.1016/j.ejor.2015.07.033>

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 organisation. 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, Śliwa, & Wright, 2010; Wright & Cairns, 2011, chap. 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 & 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 organisational 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 organisation/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 organisation may vary or put aside its corporate social responsibility agenda (cf. Garriga & 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 modelling methods to apply a structure to the process. Decision analysis can yield a number of potential benefits in this context (cf. Goodwin & Wright, 2001, 2014; Ram & Montibeller, 2013; Stewart, French, & Rios, 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 behavioural 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 & 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.

Download English Version:

<https://daneshyari.com/en/article/6896051>

Download Persian Version:

<https://daneshyari.com/article/6896051>

[Daneshyari.com](https://daneshyari.com)