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# Exploring the development of a methodology for scenario use: Combining scenario and resource mapping approaches



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#### ABSTRACT

Scenarios are tools that help managers to identify critical uncertainties and describe possible futures; they typically focus on an organisation's external environment. Scenarios are often used by organisations to explore how their external environment may develop in the future and to consider its impact on their strategy. However, in order to develop strategy, an organisation needs also to consider the internal environment, in terms of its resources and capabilities, such as that presented within the Resource-Based View of the firm (RBV). This paper proposes a novel methodology for enhancing the scenario method through its serial integration with a method from the RBV field, namely that of resource mapping. The methodology provides the ability to support the "rehearsal" of a firm's strategic performance over time by exploring how the firm's resources and capabilities interact with the competitive environment and with the various scenarios. We illustrate our proposed method with an example of its use in a teaching setting by a group of postgraduate students along with a short description of its application within a company. We reflect on the design of the method and the early experiences of using it. The main contribution of the proposed method is that it provides an integrated approach linking scenarios with strategy development and evaluation. The paper ends with suggestions for further research.

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#### 1. Introduction

Scenario planning has for many years been considered one of a number of tools used by managers to support the development of an organisation's strategy (Rigby and Bilodeau, 2007). Strategies are typically assessed against scenarios using criteria such as resilience or robustness (Ringland, 2006; Wilson, 2000). However assessing the implications of strategies and their performance against a set of scenarios is a non-trivial task, which participants in many scenario exercises find difficult for a number of reasons including the inherently complex nature of the future environment that has been captured across and within the scenarios and also given the limited information processing capacity we have as humans (Wright et al., 2009). Wilson (2000) observes that considerable skill is needed when using scenarios to develop strategy and that such skill can be helped by templates, primers and step-by-step approaches. Some authors have proposed that additional tools be 'added on' to the scenario process to help develop and evaluate strategies using scenarios (e.g. Schoemaker, 1992; Goodwin and Wright, 2001; Montibeller et al., 2006). In this paper we contribute to this body of knowledge by proposing a novel 'add-on' method that draws on developments and methods from the strategic management and system dynamics fields to be able to rehearse the strategic performance of the firm under different scenarios. The proposed method can be used in either strategic development courses (O'Brien et al., 2011) or strategic planning processes in industry (Schoemaker, 1997).

The paper begins with a review of relevant literature. First we explore the scenario literature in relation to the use of scenarios to develop strategies and strategic options. Next we introduce concepts from the Resource Based View of the firm, from the strategic management literature, along with the method of resource mapping. Then a methodological integration between the scenario methodology and resource mapping is proposed. We illustrate the proposed method with two examples, one drawn from a recent postgraduate course where students were taught the methodological integration and the other from a short account of project within a company. We then reflect firstly on the development of the method in relation to the literature and secondly on the student and real application experiences. The paper ends with some suggestions for further research.

## 2. Literature Review

### 2.1. Scenario planning

Scenarios are "tools for foresight" (de Geus, 1997) which help people to explore the future. Burt and van der Heijden (2003) identify four purposeful reasons for developing scenarios, one of which is to support the development of robust strategy or strategic options; some go so far

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as to say that scenarios are the link between the future and strategy (Lindgren and Bandhold, 2003). In the context of strategy support, scenarios also help managers to explore how their external environment may develop into the future so that current and future strategic options can be tested or wind-tunnelled against the set of scenarios to see how robust they are.

A variety of different approaches exist for developing scenarios. In making sense of this variety of approaches, classifications or groupings have been proposed; for example Bradfield et al. (2005) identify three groups or 'schools' of scenario planning. O'Brien and Meadows (2013) note that whilst there is a variation in the content of the different approaches, they typically cover three phases:

- A *preparatory* phase where the purpose and focus of the exercise is agreed and driving forces are identified.
- A *development* phase involving the development of the scenarios
- A use phase when the scenarios are used for their intended purpose (O'Brien and Meadows, 2013, p. 643)

A variety of approaches that exist covering the first two phases are well documented in the literature (see for example, Ringland, 2006; Varum and Melo, 2010; Bishop et al., 2007). Here we consider how scenarios are used, with particular reference to their use for strategy development. O'Brien and Meadows (2013) expand their description of scenario use into three further stages related with strategic development processes:

- Understanding the implications of the scenarios
- Developing strategic options
- Evaluating strategic options

O'Brien and Meadows (2013) also note that the advice given in the literature for the use phase varies from the use of prompting questions such as 'what strategy alternatives are suggested by each scenario?' (Fahey and Randall, 1998) through to the application of additional methods or frameworks, e.g. SWOT. Table 1 illustrates a variety of approaches found in the literature for supporting the three stages of scenario use.

Given the emphasis of this paper on the latter two stages of scenario use for strategy support, we briefly reflect on the methods noted against these in Table 1. Perhaps the most straightforward approach to strategy development is the prompt: what should we do in each scenario or how is the focal issue/decision affected by each scenario? Others suggest more formal analyses to support the generation of potential strategies/options. For example, Schoemaker (1992) suggests that an analysis of the organisation's competition and a strategic segmentation are undertaken post scenario development (but independent of the scenarios). These two analyses are then brought together into a core capabilities matrix where the strategies are evaluated against the scenarios and their impact on capabilities noted. Other authors use approaches that explicitly draw on the scenario implications (e.g. the opportunities and threats) to generate/develop the strategic options. For example O'Brien et al. (2007) advocate the use of a TOWS matrix to systematically consider how future opportunities and threats generated by the scenarios might be combined with the organisation's current strengths and weaknesses in order to develop a collection of potential strategic options. In this paper we further develop this approach by using recent developments in the area of strategic management and in particular the resource based approach of resource mapping to formally assess the organisation's strengths and weaknesses.

It is worth noting that the approaches listed under the heading evaluating and rehearsing options typically evaluate the options against the scenarios and other criteria. Such evaluations are typically static in that they do not conduct an analysis of the performance of the options over time. Hence, they do not rehearse the performance path of the organisation for the different scenarios.

In the next section, we introduce the concept of resource based strategies and the use of resource mapping to model them and rehearse the performance of the organisation over time using either resource mapping or system dynamics.

### 2.2. Resource-based strategies

The resource-based view (RBV) of the firm suggests that a firm's performance is determined by the strategic decisions responsible for developing a system of resources and capabilities over time (Barney, 1986, 1991; Kunc and Morecroft, 2009, 2010). Resources can be tangible

**Table 1**Examples of approaches for supporting the three stages of scenario use.

Stage of scenario use	Approach	Examples
Understanding the implications of the scenario	Identify the major opportunities and threats inherent in each scenario	SRI International (Ringland, 1998);
		O'Brien et al. (2007)
	Identify Key Success Factors crucial to survival or competitive advantage	Schoemaker (1991)
	PESTEL & Resource analysis	Walsh (2005)
	Identify market and customer needs	Ringland (1998)
	Assess impact of scenarios on Porter's five forces & Resources	Tapinos (2012)
Developing strategic options	Review focal issue/decision in the light of the scenarios	Schwartz (1991)
	Prompt - What strategy alternatives are suggested by each scenario?	Fahey and Randall (1998)
	Analysis of competition followed by strategic segmentation	Hadfield (1991); Schoemaker (1997)
	Core competences and capabilities	Van der Heijden (2005); Schoemaker
		(1992, 1997)
	SWOT/TOWS analysis	O'Brien et al. (2007)
Evaluating & rehearsing options	Prompt – how does the decision look in each scenario?	Schwartz (1991)
	Evaluate each option against selected criteria:	Lindgren and Bandhold (2003);
	Vision alignment/Utilisation of organisational strengths/fit with environment	O'Brien et al. (2007); Tapinos (2012)
	Vision alignment/robustness/stakeholder reaction	
	Feasibility (given resources)/Acceptability (to stakeholders)/Suitability (fit with environment)	
	Creation of a strategy/scenario matrix to evaluate robustness of options	Fink et al. (2005)
	and fit of strategies to scenarios.	
	Develop core capabilities matrix to assess their performance across strategic	Schoemaker (1992)
	segments and scenarios, for synergy and robustness	
	Multi criteria decision analysis for evaluating strategic options taking into	Goodwin and Wright (2001);
	account decision-makers' multiple conflictive objectives in order to design robust options	Montibeller et al. (2006)
	Real options Analysis to perform an integrated risk management process	Miller and Waller (2003)
	involving the identification of the full range of exposures across the portfolio of businesses	
	due to uncertain futures.	

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