

**SOURCING STRATEGIES AND COMPETITIVE ADVANTAGE: AN
EMPIRICAL ANALYSIS UTILISING RESOURCE BASED THEORY**

Thesis submitted in part fulfilment of the requirements for the degree of
Doctor of Philosophy at Liverpool John Moores University

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Declaration

I declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning. Further, all the work in this thesis is entirely my own, unless referenced in the text as a specific source and included in the bibliography.

Abstract

This thesis is concerned with establishing whether particular sourcing strategies lead to the achievement of sustainable competitive advantage, and the affect that the type of power relationships have on the situation. The theoretical framework for the study was grounded in the resource-based view.

A survey was undertaken of twelve sourcing strategies within six organisations. The organisations varied in size and were from different industries. Furthermore, the sourcing strategies comprised six reactive and six proactive approaches and exhibited a varied mix of different power relationships. This enabled a thorough examination of the variables to be carried out. Three critical cases were then analysed in greater depth in order to investigate some of the contextual factors and second-order findings that were uncovered during the survey.

The study found that proactive sourcing strategies may lead to sustainable competitive advantage, particularly when combined with buyer dominant or interdependent power relationships, but reactive approaches do not. However, a number of intervening variables were identified that also appear to influence the situation, such as the nature of the purchase, the objective of the sourcing strategy, and the degree of commitment to and investment in the sourcing strategy. A model is developed which explains the relationship between sourcing strategies and sustainable competitive advantage.

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Chapter One

Introduction

1.1 Background to the Research

Over recent years there has been an increasing recognition in the academic literature that the purchasing function plays a strategic role within an organisation, achieving not just cost savings but also sustainable competitive advantage (Thrulogachantar, 2010; Van Weele, 2010; Lawson et al, 2009; Benito, 2006; Tracey, Lim & Vonderembse, 2005; Mol, 2003; Carr & Pearson, 1999; Kapoor & Gupta, 1997; Carter & Narasimhan, 1996; Tully, 1995; Ellram & Carr, 1994; Spekman, Kamauff & Salmond, 1994). As industries become more competitive, the proportion of external expenditure increases, and inputs become more valuable and complex, purchasing can make a real difference to the organisation's bottom-line, as it is responsible for locating and aligning suppliers, reducing costs, understanding supply markets and identifying leading-edge technologies.

Not all writers concur with this view, however. The opposing argument is that, while purchasing may have a broad impact on an organisation, its involvement in key strategic activities is limited and it is essentially a support function (Ellram, Zsidisin, Siferd & Stanley, 2002; Johnson, Leenders & Fearon, 1998; Pearson, Ellram & Carter, 1996). As organisations concentrate on their core competences and outsource everything else, it follows that procurement is only responsible for non-core resources and thus cannot be seen as strategic. The dichotomy of views is typified by Ramsay (2001a & 2001b), who in his first paper concludes that procurement is strategically irrelevant, but then changes his mind in his second paper and demonstrates how the function can lead to sustainable competitive advantage.

Although there is some dissent about whether purchasing plays a strategic role within the organisation, most recent studies have concluded that it does. However, the problem with the studies is that the purchasing function's contribution is measured in terms of the degree to which it exhibits certain generic "best practice" principles and the effect that this has on the profitability of the organisation. This is likely to give an indication of the overall competence and contribution of the purchasing function across all sourcing activities rather than identifying whether certain sourcing strategies contribute to sustainable competitive advantage more than others.

1.2 Purpose and Objectives of the Research

Rather than look at the broad, overall contribution of the purchasing function to an organisation's profitability, which is the approach that most existing studies have taken, this thesis takes a more focused stance in assessing whether particular sourcing strategies lead to sustainable competitive advantage more than others. This will enable it to consider an aspect of purchasing's contribution to the success of an organisation that has not yet been fully addressed, thus making a significant contribution to the general body of knowledge in this area. Sourcing strategies vary enormously and it is the aim of this research to establish which sourcing strategies, if any, lead to sustainable competitive advantage.

The overall purpose of the thesis is broken down into a number of key objectives:

- Define competitive advantage, clearly differentiating between short-term advantage and the more sustainable variety.
- Identify different types of sourcing strategy and the characteristics that determine whether they achieve sustainable competitive advantage.
- Analyse, through a case survey approach, a representative sample of sourcing strategies adopted by typical organisations in order to test the variables.

- Identify from the empirical study further intervening variables that may affect the outcome.
- Undertake a critical case analysis in order to test the intervening variables.
- Develop a model that explains the relationship between sourcing strategies and sustainable competitive advantage that incorporates the findings of the whole research project.

The main purpose of the thesis is to define sustainable competitive advantage and to test which sourcing strategies achieve it and which do not. A case survey and a critical case analysis are undertaken in order to determine the outcome. The main contribution of the research is to develop a model which explains how and why specific sourcing strategies do or do not achieve sustainable competitive advantage.

1.3 Key Theories

The key theory used to define competitive advantage in this research is the resource-based view (Kunc & Morecroft, 2010; Pertusa-Ortega, Molina-Azorin & Claver-Cortes, 2010; Arend & Levesque, 2010; Kraaijenbrink, Spender & Groen, 2010; Lockett, Thompson & Morgenstern, 2009; Ambrosini & Bowman, 2009). Other theories such as leanness and agility are more commonly used in the purchasing and supply literature (Aronsson, Abrahamsson & Spens, 2011; Ambe & Badenhorst-Weiss, 2010; Naim & Gosling, 2010; Stavroulaki & Davis, 2010; Chan & Kumar, 2009; Hallgren & Olhager, 2009), but the resource-based view appears to be the ascendant approach in academic discussions relating to organisational strategy. Leanness and agility are found to be prescriptive, operational approaches, whereas resource-based thinking is a strategic, theorised view of what leads to competitive advantage, thus making it a robust concept.

According to the resource-based view, competitive advantage can either be of short-term duration or it can be sustainable. Peteraf's (1993) four cornerstones of competitive advantage theory is used as a means of differentiating between these two situations. Cornerstones 1 and 2, resource heterogeneity and ex ante limits to competition, enable a

resource to achieve short-term competitive advantage. However, it is cornerstones 3 and 4, ex post limits to competition and imperfect mobility, which ensure that the competitive advantage is sustainable.

Resource-based theory states that sustainable competitive advantage is the achievement of long-term rents (above normal profits over an extended time period). It is achieved by owning, deploying and protecting advantage-generating resources that enables an organization to out-perform others in the same sector or market.

Although competitive advantage is achieved by owning advantage-generating resources, the effectiveness of those resources is determined by how they are deployed and protected both internally and in the market place. The affects of market positioning (Goldman & Grinstein, 2010; Voola & O'Cass, 2010; Camison & Villar, 2009; Ndofo, Sirmon & He, 2009; Wilson & Amine, 2009) and institutional factors (Bititci et al, 2011; Gao, Murray & Kotabe, 2010; Kelliher & Reinl, 2009; Abhijit et al, 2009; Yang et al, 2009) are therefore considered in this research.

Furthermore, since this study deals with advantage-generating resources beyond the focal organisation's boundaries, the relational view is considered as an adjunct to the resource-based approach (Cao & Zhang, 2011; Sanders, Autry & Gligor, 2011; Srinivasan, Mukherjee & Gaur, 2011; Gold, Seuring & Beske, 2010; Liu, Ghauri & Sinkovics, 2010; Wittmann, Hunt & Arnett, 2009). Developing integrated relationships with supply chain partners can lead to the generation of relational rents, thus enabling a firm to achieve a sustainable competitive advantage that may not be possible by acting alone.

The resource-based view enables the theoretical factors that lead to sustainable competitive advantage to be identified. However, empirical research needs a means of operationalising these theoretical constructs. With this in mind, a derivation of Collis & Montgomery's (1995) five tests of sustainable competitive advantage is used. The five tests are : inimitability, durability, appropriability, substitutability, and competitive superiority. These are a useful way of turning the theoretical concepts of the resource-based view into practical action.

In order to assess whether particular sourcing strategies lead to sustainable competitive advantage, the power regimes school classification of sourcing strategies (Cox et al, 2004) is used, due to its adherence to resource-based principles. The four generic sourcing options identified by the power regimes school are: supplier selection, supply chain sourcing, supplier development, and supply chain management. The first two are reactive approaches based on market contestation, while the latter two are proactive inasmuch as they utilise integrated and collaborative relationships with suppliers.

Whether a sourcing strategy achieves sustainable competitive advantage is dependent on the type of strategy adopted (proactive or reactive), but is also affected by the power relationship between the buyer and the supplier. In order to test this, the power resources theory of Cox et al (2002) is used. This theory is based on the key determinants of utility, scarcity, information asymmetry and switching costs, and classifies power relationships into four categories: buyer dominance, interdependence, independence, and supplier dominance.

1.4 Outline of the Thesis

The thesis consists of seven chapters. An outline of the content relating to subsequent chapters follows below.

Chapter Two is the literature review. The first part discusses the literature on sustainable competitive advantage in a business context and identifies a definition of how it can be measured. The resource-based view is the predominant thinking in this area and the measure used (the achievement of above industry-average profits in the long-term) is derived from this approach.

The chapter then narrows its focus by discussing the impact of sourcing on sustainable competitive advantage. Four generic sourcing strategies that organisations commonly deploy are discussed, and an assessment is made as to whether they may or may not lead to sustainable competitive advantage. The power relationship between buyers and suppliers appears to have an influence on the ability of a sourcing strategy to be competitively advantageous. The chapter therefore incorporates a discussion of different

types of power relationship, based on the criteria of utility, scarcity, information asymmetry and switching costs.

Based on the findings of the literature review, a model is devised containing the various components that determine whether sourcing strategies achieve sustainable competitive advantage. Two research questions are generated from this model.

Chapter Three of the thesis looks at the research methodology that is used to test the impact of sourcing strategies on sustainable competitive advantage. The chapter discusses the research philosophy, the strategic design issues and the finer details of the research process. There is also a discussion of the measures taken to ensure that internal and external validity are achieved, and that fair tests of the research questions are conducted.

The next part of the thesis looks at the empirical evidence. Twelve sourcing strategies related to six organisations are surveyed, comprising six reactive sourcing strategies and six proactive, are considered utilising a case survey approach. The sourcing strategies are evaluated in terms of whether they support sustainable competitive advantage and the power relationships that are demonstrated. Chapter Four gives an introduction to the cases and presents the case survey findings, while Chapter Five discusses the implications.

The case survey is followed up by a critical case analysis. This looks at three representative critical cases in more depth in order to analyse some of the contextual factors and second-order findings that were uncovered during the survey. The critical case analysis is discussed in Chapter Six.

Chapter Seven discusses the overall conclusions. It contains a concluding summary of the findings and an evaluation of whether the research questions have been supported. A model is developed that explains the relationship between sourcing strategies and sustainable competitive advantage based on the findings of the research project. The limitations and contribution of the research along with recommendations for further research are also suggested.

Chapter Two

Literature Review

2.1. Chapter Introduction

This chapter contains a review and analysis of the existing literature in relation to sourcing strategies and sustainable competitive advantage. Figure 2.1 shows the literature review flow and should be used in conjunction with the ensuing discussion.

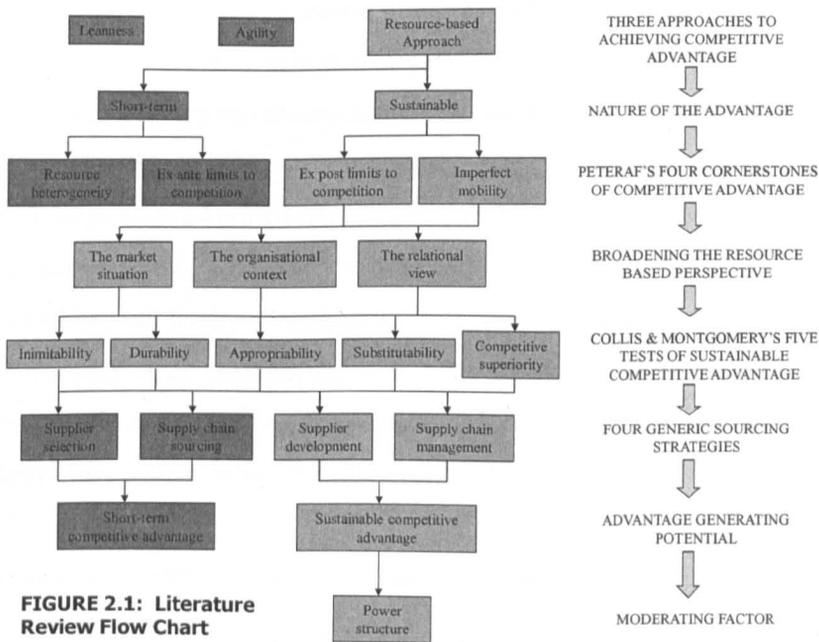


FIGURE 2.1: Literature Review Flow Chart

Three commonly cited approaches to achieving competitive advantage are considered: (i) leanness; (ii) agility; and (iii) the resource-based view. Leanness and agility are chosen due to their popularity in the purchasing and supply literature, while the resource-based view appears to be the ascendant approach in academic discussions relating to organisational strategy. Leanness and agility, which are discussed in Section 2.2, are

critically analysed and shown to be prescriptive, operational approaches. The resource-based approach, on the other hand, is found to be a strategic and theorised view of what leads to competitive advantage thus making it a useful concept for this thesis. The resource-based view is discussed in Section 2.3.

According to the resource-based view, competitive advantage can take one of two forms: (i) it can be short-term; or (ii) it can be sustainable. Peteraf's (1993) four cornerstones of competitive advantage are introduced in Section 2.3 as a means of differentiating between these two situations. Cornerstones 1 and 2, resource heterogeneity and ex ante limits to competition, enable a resource to achieve short-term competitive advantage. However, it is cornerstones 3 and 4, ex post limits to competition and imperfect mobility, which ensure that the competitive advantage is sustainable.

The resource-based view enables a robust definition of sustainable competitive advantage to be devised as well as a means of measuring it. However, the resource-based approach cannot be viewed in isolation. Competitive advantage can be attributed to owning advantage-generating resources, but whether they can be deployed and protected is determined by internal constraints and market forces. It is essential, therefore, to broaden the resource-based perspective to consider both the market situation and organisational context when developing key resources. Furthermore, a firm's critical resources may extend beyond its own organisational boundaries. Developing integrated relationships with supply chain partners can lead to the generation of relational rents, thus enabling a firm to achieve a sustainable competitive advantage that may not be possible by acting alone. All of these issues are discussed in Section 2.3.

Although Peteraf's (1993) four cornerstones model makes it possible to identify the theoretical factors that lead to sustainable competitive advantage, empirical research needs a means of operationalising these theoretical conditions. With this in mind, Collis & Montgomery (1995) put forward five tests that can be applied to resources in order to ascertain whether they achieve sustainable competitive advantage: (i) inimitability; (ii) durability; (iii) appropriability; (iv) substitutability; and (v) competitive superiority. These are all discussed in the final part of Section 2.3.

In order to assess whether particular sourcing strategies lead to sustainable competitive advantage, a robust classification of sourcing strategies is required. The four generic sourcing options identified by the power regimes school (Cox et al, 2004) is used in this thesis due to the school's adherence to the principles of resource-based theory. The generic sourcing strategies are: (i) supplier selection; (ii) supply chain sourcing; (iii) supplier development; and (iv) supply chain management. The power regimes approach is discussed in Section 2.4 and the four sourcing strategies are covered in Sections 2.5, 2.6, 2.8 and 2.9 respectively.

Using resource-based theory, it is possible to conceptualise the advantage-generating potential of the four sourcing strategies by applying Peteraf's (1993) four cornerstones model and Collis & Montgomery's (1995) sustainability criteria. Based on this conceptualization, it is argued that reactive sourcing strategies (supplier selection and supply chain sourcing) may only have the potential to achieve short-term competitive advantage. This is discussed in Section 2.7. However, proactive sourcing strategies (supplier development and supply chain management) may have the potential to achieve sustainable competitive advantage, which is discussed in Section 2.10.

In order for proactive sourcing strategies to fulfil their advantage-generating potential, a moderating factor is identified: the power structure. It is argued that proactive sourcing strategies may only achieve sustainable competitive advantage in situations of buyer dominance or interdependence (Cox et al, 2002). This issue is discussed in Section 2.10.

Based on the findings of the literature review, it is possible to construct a model of the determinants that influence whether a sourcing strategy achieves sustainable competitive advantage. This model is discussed in Section 2.11. It is argued that the ability of an organisation to select, develop and deploy an advantage-generating sourcing strategy and whether this in turn leads to sustainable competitive advantage is constrained by the market and the social environment in which it operates. From this model it is possible to develop two testable research questions, which are discussed in Sections 2.12 and 2.13.

2.2. Lean and Agile Approaches to Sustainable Competitive Advantage

2.2.1 The Lean Approach

The lean approach is a concept that is put forward by its proponents as a means to achieve sustainable competitive advantage. It is derived from a study of Toyota's operations in the 1990s and has since been taken up by many organisations and industries, driven by proponents such as the Lean Enterprise Research Centre in Cardiff. The lean approach seeks to improve the operational efficiency of organisational processes. Put simply, being lean entails doing the same or more with less by concentrating on reducing waste, improving the flow of materials and information, and adopting continuous improvement and demand-pull principles.

McCullen & Towill (2001) see the two concepts of *value stream* and *waste* as being at the centre of lean thinking. The value stream is a product oriented disaggregation of the supply chain, which can be analysed with a view to emphasising those activities that add value (from the customer's perspective) and eradicating those that create waste and inefficiency.

Based on the work of Ohno in the 1960s, there are generally seen to be seven common forms of waste: production of goods not yet ordered; waiting; rectification of mistakes; excess processing; excess movement; excess transport; and excess stock. In order to eradicate these inefficiencies, a number of techniques have been put forward by the proponents of lean thinking: level scheduling and elimination of demand amplification; only making or delivering what is pulled from downstream; synchronising work throughout the system to the same rhythm as customer demand; and logging irregularities in order to conduct root cause elimination with a view to preventing recurrences.

The lean concept, based on a Japanese philosophy which emphasises low waste and high added value allied to close involvement of employees and suppliers, took a long time to prove itself in Western companies, which were wedded to mass production, command and control management styles and adversarial supplier relationships. Early attempts to incorporate just-in-time techniques, which consisted of passing the burden of inventory

upstream to suppliers, were not compatible with lean thinking, but were understandable given the legacy of past practices. Michaels (1999) found that many organisations did not understand the parallel challenges of how to eliminate waste in production and in human behaviours, which impaired the ability to drive through changes.

The lean approach is now a well-established concept, but it does have its critics. In its pursuit of operational efficiency, Watson, Cox & Noula (1999) point out that the value generated must often be passed on to customers if it is they who exert power in the supply chain. This *innovation treadmill* of continuous improvement with no prospect of appropriating value for oneself is a less than ideal approach. Of course, operational efficiency may be a necessity in competitive, mature markets and where low barriers to entry exist, but it is only likely to be what Hill (2000) would call a *market qualifier* rather than an *order winner* and as such cannot be seen as sustainable in the long-term.

Lewis (2000) finds that lean principles do not necessarily lead to improved performance and that the market context determines whether lean resource configurations lead to sustainable competitive advantage. For instance, the specificity of location, scarcity of employee skills and firm's infrastructure can all have an effect on this. Furthermore, Lewis also found problems with the original research undertaken by Womack, Jones & Roos (1990), which casts doubt on the measurement process that showed that Japanese firms were twice as productive as comparable US ones.

Another problem is that the lean approach was initially conceived from one case study and it is difficult to imagine that the findings would be appropriate for all business cases, but the concept has been adopted by a wide range of firms and industries. This is an example of what Cox (1997) calls *bare-foot empiricism*, whereby generalisations about business success are made by observing one or two discrete operational cases, leading to fads that do not necessarily work outside the original conjuncture of events and circumstances. Furthermore, since the observation takes place at a unique moment in time, it is based on a benchmarking mentality that gives no guide to future actions.

McCullen & Towill (2001) summarise the lean movement in a very dismissive manner by calling it a benchmarking study into vehicle manufacturing in which the Toyota Production System was identified as best practice and re-packaged as "lean production".

Although attempts have been made to extend the concept to the *lean enterprise* (Womack & Jones, 1996), the *lean supply chain* (Lamming, 1996) and *lean logistics* (Jones & Rich, 1997), there is a tendency for lean principles to be inward looking with benefits that are restricted to the factory.

In conclusion, the lean approach may well be appropriate in certain circumstances (process-based, low-margin industries) and may well be an essential requirement (a market qualifier) if all of an organisation's competitors are adopting it, but it does not necessarily lead to sustainable competitive advantage. It is a prescriptive and operational approach that is based on one case study. Furthermore, it fails to recognise that achieving cost reductions and operational efficiency is not the same as achieving sustainable competitive advantage (above average profits over the long-term). It is for these reasons that the lean approach was not used as a basis for this research.

2.2.2 The Agile Approach

The agile concept has recently gained ground as an approach whereby organisations can achieve sustainable competitive advantage by designing their supply chains to be responsive to the needs of the end customer. Unlike the lean approach, the agile concept is based on an understanding of marketplace requirements.

The origins of agility go back to the Iacocca Institute Report (1991) which argued that a new competitive environment was emerging in which competitive advantage would be realised by firms that respond rapidly to demands for highly customised quality products. The key characteristic of the agile concept is flexibility. It was initially thought that this should be achieved through automation to enable reduced set-up times and rapid changeovers in order to achieve greater responsiveness to changes in product mix or volume. However, the concept has since been extended to the wider business context and the concept of agility as an organisational orientation was developed. This embraces organisational structures, information systems, logistics processes and, in particular, mindsets.

Kidd (1994) emphasises this wider perspective by stating that the means to achieve agility is to integrate flexible technologies with a highly skilled, knowledgeable and

empowered workforce within management structures that stimulate co-operation within and between firms. Agility therefore represents a broad business concept that may be defined as the ability of an enterprise to thrive in an environment of rapid and unpredictable change (Gould, 1997).

There has been much debate in the literature regarding the similarities and differences between the lean and agile approaches (Aronsson, Abrahamsson & Spens, 2011; Ambe & Badenhorst-Weiss, 2010; Naim & Gosling, 2010; Stavroulaki & Davis, 2010; Chan & Kumar, 2009; Hallgren & Olhager, 2009). Most authors agree that agility is based on lean principles, although they warn that there are some apparent contradictions between the stability required for leanness and the flexibility required for agility. Leanness is therefore seen as a necessary rather than a sufficient condition for the achievement of agility.

Advocates of agility criticise the lean approach as being inward looking and rigid, while the lean school argue that flexibility is part of their philosophy and, as such, that the lean philosophy is agile. Certainly lean enterprises advocate flexible manufacturing systems, educated, multi-skilled and empowered workers and co-operative relationships, thus fulfilling many of the agile criteria.

Mason-Jones, Naylor & Towill (2000) state that both concepts have a common goal of reducing supply chain uncertainty, which leads to poor matching of supply and demand. Much of the uncertainty is system-induced, due to internal practices and relationships, and is therefore within the direct control of the firm, while other uncertainties are due to the volatility of the marketplace. Organisations can adopt lean principles to reduce the system-induced effects and then develop an agile strategy to deal with marketplace effects.

Naim & Gosling (2010) confirm this differentiation between internal and external aspects, by emphasising the distinguishing features of each paradigm: leanness means “developing a value stream to eliminate all waste, including time, and to ensure a level schedule”, whereas agility means “using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market”. This may mean that an activity that is termed “waste” in the lean approach may be essential when pursuing agility.

Although the means of achieving leanness and agility are similar, McCullen & Towill (2001) argue that the strategic intent and outcome is different: whereas the main goal of leanness is to eliminate waste in order to achieve quality and efficient use of resources, agility goes a step beyond by seeking to achieve competitive advantage by rapid response and mass customisation.

Van Hoek (2000) develops this point by differentiating between agility at the operational level and a more strategic concept. At the operational level, a combination of efficiency and flexibility is required for an organisation to be agile and most lean enterprises are capable of this. However, there also needs to be an overlying concept that enables rapid re-configurability of the supply chain in response to market opportunities. Lean organisations are much less able to do this, as demonstrated in the automotive industry by large quantities of finished goods inventory, long customer lead times and the inability to achieve the “three-day car”. The overlying concept, therefore, must be agility, rather than lean thinking.

Lean and agile principles are often used together in hybrid arrangements within the overall concept of agility. A detailed understanding of product types and marketplace arrangements is needed to ensure that these combinations are effectively implemented. Mason-Jones, Naylor & Towill (2000) differentiate between *fashion products* and *commodities*. The former have short life-cycles and high demand uncertainty with an order-winning criterion of availability (service level). These require an agile approach. Commodities, on the other hand, have long life cycles and low demand uncertainty with an order-winning criterion of price and these products are compatible with a lean approach.

Christopher & Towill (2001) put forward three practical ways of marrying lean and agile paradigms. The *Pareto curve approach* is the first method and differentiates between product types. The 20% of products that account for 80% of total volume lend themselves to lean methods, while the remainder require an agile configuration. This approach can be used where there are high levels of product variety with non-proportionate demand across the range and could be a useful way of identifying the fashion products and commodities mentioned previously.

The second approach is the *separation of surge and base demand* for each product. This can be used in situations where a base level of demand can confidently be predicted from past experience and small batch capacity is available to cope with the less predictable surge demand. Lean procedures are used for the base demand and agile processes for the surge element.

Christopher & Towill's third proposal, the *de-coupling point approach*, is perhaps that which is causing the most interest in the business world at present. Where there is the possibility of modular production or intermediate inventory allied to delayed final configuration or distribution, a de-coupling point can be inserted in the supply chain. This approach (sometimes known as *leagility* or *late customisation*) utilises the postponement principle. Inventory is held in a generic or modular form and final assembly is carried out only when the exact customer requirement is known. The de-coupling point is the point to which the customer's order penetrates, where order-driven and forecast-driven activities meet.

Although the postponement principle can be adopted by most supply chains, the location of the de-coupling point will vary. It should be positioned so as to best suit the need for responding to a volatile demand downstream, yet providing level scheduling upstream. In this way, lean principles can be adopted upstream of the de-coupling point and agile processes incorporated downstream. An organisation can therefore achieve high levels of efficiency by making standard products while at the same time putting them together in unique combinations to achieve customer choice. This is the underlying principle behind mass customisation.

According to Van Hoek (2000) the benefits of the de-coupling point approach are improved inventory cycle times, raised delivery reliability, lowered obsolescence risks, improved speed of delivery, lowered logistics costs and improved product customisation. There is currently a great deal of interest in the postponement principle and many organisations and industries are adopting it. However, it should not be seen as a panacea for all situations. Companies may decide to postpone the assembly of certain products (such as high end systems) or products for certain markets (such as emerging ones) only.

Agility is a more sophisticated concept than leanness because it is drawn from observations of more than one case. However, it is still a prescriptive, best practice approach. Generalisations are developed of the practices that companies are using and then put forward as *best practice* solutions. The problem with prescriptive approaches such as leanness and agility is that all firms have a distinct culture and unique operating practices, making it difficult to generalise. Furthermore, if all businesses can adapt such *best practices*, then there is no scope for competitive advantage or sustainability.

Peters & Waterman (1982) adopted this approach in their popular book by defining a list of principles that companies need to adopt in order to become *excellent organisations*. The limitations of the prescriptive approach is demonstrated by the fact that the performance of many of Peters & Waterman's *excellent organisations* deteriorated significantly after they had been studied, despite their so-called best practice ways of working.

Another note of caution comes from Rigby et al (2000), who criticise the systems thinking approach to the agility concept, which is mainly concerned with the physical transfer of materials and explicit information, such as stock turns and delivery patterns. Agile thinking does not address the softer aspects of interaction, the “grey areas” between organisational boundaries, nor does it address managers’ expectations or fears concerning the behaviour of customers and suppliers and issues relating to tacit knowledge, power, trust, dependency and other human factors.

In conclusion, agility is a more useful concept to consider in relation to competitive advantage than lean, since the former takes into account market characteristics and is based on a broader source of research material. However, agile supply is still a prescriptive, systems thinking approach, which advocates best practice principles, but in reality is confined to process-based industries and the “hard” aspects of organisational behaviour. It is not therefore the strategic, theorised view of what leads to sustainable competitive advantage that is being sought. The resource-based view, discussed in the next section, appears more promising.

2.3. The Resource Based Approach to Sustainable Competitive Advantage

2.3.1 Introduction

The resource-based view is the third approach to be considered. It has emerged in recent years as a popular theory of competitive advantage. Rather than being empiricist, it is based on economic principles and management insights, thus achieving the dual accomplishments of rigour and reality (Fahy, 2000). Furthermore, the resource-based view links to modern economic theory of the organisation as exemplified by Williamson (1985).

The resource-based view is generally seen as being anticipated by three authors 50 years ago. Penrose (1959) refers to a *pool of resources* organised in an administrative framework, Selznick (1957) talks about different firms developing *distinctive competences*, and Chandler (1962) details how the administrative framework of an organisation influences the *utilisation of its resources*.

However, it was not until the turn of the eighties that the concept really took off in the strategy field. Caves (1980) describes firms' quest for *rents*, Quinn (1980) defines strategy as a means of *allocating resources to a unique posture*, and Hofer & Schendel (1979) stress the importance of *competences*. Two seminal papers that played a founding role in the resource-based view were produced by Lippman & Rumelt (1982) and Barney (1986). Contributions since then have refined and developed the themes contained in these papers.

Foss (1997) identifies two research themes related to the resource-based view: (i) the conditions for sustainable competitive advantage; and (ii) diversification studies. This literature review concentrates on the former, in accordance with the aims of the research. Furthermore, Montgomery & Wernerfelt (1988) identify three ways of achieving rents (above normal profits). They can be achieved through: (i) collusive relationships with competitors; (ii) disequilibrium effects (luck); or (iii) uniqueness. It is the third means that is of particular relevance, since this research is concerned with the deliberate decisions that firms make in competitive environments.

Although the resource-based view is based on economic principles, it does not conform to neoclassical thinking, which focuses on the nature of the market in which the firm operates and treats its operations as a *black box* (Nelson & Winter, 1974). According to the neoclassical economics view, the structure of the industry determines the conduct of a firm which in turn affects the performance of that company. Since firms operate in perfectly competitive markets, long-term rents are competed away and it is therefore not possible to sustain competitive advantage in the long-term.

The resource-based view rejects this thinking. Cox (1997) asserts that the ideal way to achieve business success is through the creation of absolute or relative degrees of monopoly. The goal of a business, therefore, is not to operate successfully within competitive markets, but to stop competitive markets operating. Firm heterogeneity rather than market structures determine sustainable competitive advantage and organisations focus on their conversion processes in order to identify scarce resources that can gain economic rents with a view to protecting them in the long-term. These are variously called *advantage-generating resources* (Fahy, 2000), *competitively valuable resources* (Collis & Montgomery 1995), *distinctive capabilities* (Olavarrieta & Ellinger, 1997), *strategic assets* (Coff & Laverty, 2001), *superior resources* (Peteraf, 1993), or *critical assets* (Cox, 1997). The terms are used interchangeably and synonymously in the following discussion.

2.3.2 Discussion of the Resource Based Approach

According to the resource-based view, competitive advantage is achieved by owning advantage-generating resources. Chaharbaghi & Lynch (1999) describe *competitive advantage* as the attributes and resources that allow an organisation to out-perform others in the same sector or market, while the term *sustainable* refers to the protection such attributes and resources offer into the future to maintain that competitiveness. In this way, competitive advantage can be seen as a static concept, while sustainability is a dynamic process. The ability to achieve *long-term rents* is often seen as the measure of sustainable competitive advantage.

Using this definition, it is clear that business success can take two forms: (i) short-run competitive advantage; and (ii) sustainable competitive advantage. Only the latter leads to the long-term achievement of economic rents. Any discussion of business success in relation to the resource-based view must therefore be capable of differentiating between the two forms. In order to do this, the work of Peteraf (1993) is used as a starting point. Peteraf devised a resource-based model of the theoretical conditions which underlie competitive advantage and, as such, is a useful construct in determining the resource factors that lead to competitive advantage and the conditions which sustain it. The model consists of four cornerstones, which are used as the framework for the following discussion.

The first cornerstone is *resource heterogeneity*. Firms essentially have varying capabilities. Those with marginal resources only expect to break even, while those with superior resources will earn rents. Superior resources can be attributable to some sort of uniqueness achieved through product differentiation, size advantage, investments and first mover advantages. One or a combination of these will achieve a condition of absolute or relative monopoly which will enable rents to be earned. However, these rents are not necessarily sustainable, as any of the conditions can be overcome or copied by competitors. Resource heterogeneity, therefore, only achieves short-run competitive advantage. It is a necessary but not sufficient requirement for achieving sustainable competitive advantage.

The second cornerstone is *ex ante limits to competition*. Prior to a firm establishing a superior resource position, there must be limited competition for that position otherwise anticipated returns are competed away. This ensures that the cost of adopting a strategy is less than the returns available from it. Spotting the opportunity and being the first mover ensures that entrepreneurial rents are earned, but if other firms are also pursuing the same opportunity, then only normal returns will be achieved.

Barney (1986) refers to the competition for resources as *strategic factor markets* and states that buyers will not be able to achieve superior economic performance unless there are imperfections in them. There are a number of strategic factor market imperfections: (i) when only one firm controls all the resources needed to implement a strategy; (ii) when only one firm attempts to implement a strategy; (iii) when one firm has access to

lower cost capital than others; (iv) when one firm has a size advantage over others; (v) when one firm has superior access to resources or customers; and (vi) when there are restrictions on competitors' actions. Rents are derived from these imperfections in the strategic factor markets, but the rents may not be sustainable because other firms may enter the market in time and make it more competitive. As with resource heterogeneity, *ex ante* limits to competition are therefore a necessary but not sufficient requirement for achieving sustainable competitive advantage.

The third cornerstone is *ex post limits to competition*. Subsequent to a firm gaining a superior position and earning rents, there must be forces which limit the competition for those rents. If not, then competition may dissipate the rents by increasing the supply of scarce resources or undermining a monopolist's attempts to restrict output. *Ex post* limits to competition preserve the heterogeneity of superior resources (making them durable) and consequently ensures that the competitive advantage generated is sustainable.

Ex post limits to competition ensure that advantage-generating resources are durable through either *imperfect substitutability* or *imperfect imitability*. Imperfect substitutability is one of Porter's (1985) classic five forces. Firms that have superior resources that cannot easily be substituted by others are likely to achieve sustainable competitive advantage. Imperfect imitability can be explained by Rumelt's (1984) *isolating mechanisms*. These protect individual firms from imitation and therefore preserve their rent streams. *Isolating mechanisms* make firms' competitive positions stable and defensible, and are the essential theoretical concept for explaining the sustainability of rents (Mahoney & Pandian, 1992).

Isolating mechanisms can take the form of enforceable rights to the exclusive use of unique resources, such as patents, trademarks, and property rights. These all serve to limit second-mover imitation of first-mover success. However, *Causal ambiguity* is the major isolating mechanism identified by Lippman & Rumelt (1982). This refers to the uncertainty regarding the causes of differences among firms and prevents would-be imitators from knowing exactly what to imitate or how to go about it. This uncertainty is compounded by *bounded rationality* (Williamson, 1979). Firms have limited information about their competitors and limited ability to process what they know.

Dierickx & Cool (1989) state that the imitability of an asset depends on the nature of the process by which it is accumulated. Assets which develop and accumulate within the firm have path dependency (uniqueness created over time through the development path of the resource). They tend to defy imitation because they are developed through organisational skill and corporate learning. This makes them socially complex and gives them a strong tacit dimension.

Tacit knowledge is a key form of causal ambiguity. Ambrosini & Bowman (2001) differentiate between *objective* and *tacit* knowledge by evaluating them against the two elements of *communicability* and *possession*. Objective knowledge can be written down, encoded, explained or understood and can therefore be easily communicated. Furthermore, it is not specific or idiosyncratic to the firm or person possessing it. Tacit knowledge, on the other hand, is difficult to write down, formalise or explain, is taken for granted and embedded in specific contexts, making it difficult to imitate or copy and thus a source of sustainable competitive advantage.

Returning to Peteraf's model, the fourth cornerstone is *imperfect mobility*. This refers to resources that are somewhat specialised to firm-specific needs, making them more valuable within the firm than to others. Coff & Laverty (2001) differentiate between discrete (non firm-specific) resources and those that are systemic (firm-specific) and this is an important consideration in determining the potential for resources to achieve sustainable competitive advantage. Williamson (1979) refers to this phenomenon as *asset specificity*. An asset is specific if it has high value only when used in certain applications and does not have much value in alternative uses.

Firm-specific investments create sunk and switching costs which deter imitation (Montgomery & Wernerfelt, 1988). Teece (1986) also refers to co-specialised assets which must be used in conjunction with each other and are not valuable when separated. Finally, imperfect mobility will exist in situations where the transaction costs of transfer are high (Williamson, 1985; Rumelt, 1987). Resources that are imperfectly mobile are bound to the firm and are therefore available for use over the long-term, thus achieving sustainable competitive advantage.

In relation to the third and fourth cornerstones (those which determine the sustainability of competitive advantage), the degree of imitability and mobility is likely to vary depending on the type of resource in question. Fahy (2000) categorises resources under three headings: (i) *tangible assets*, such as fixed and current assets; (ii) *intangible assets*, for example intellectual property, patents, networks, databases, and reputation; and (iii) *capabilities*, such as skills, routines, interactions, culture and trust.

Tangible assets tend to be physical, individual and free-standing resources. This makes them transparent and therefore fairly easy to identify and duplicate. Intangible assets tend to be opaque and thus more difficult for a competitor to determine. Capabilities have the greatest advantage-generating potential. This is because they are clusters of resources which Dierickx & Cool (1989) call *accumulated asset stocks*. Foss (1997) states that, where there are high levels of complementarity and co-specialisation among individual resources, it is the way resources are clustered and how they interplay that is important to competitive advantage, not the individual resources themselves. Capabilities therefore are difficult to identify and to duplicate and are also enhanced by use, thus achieving high levels of causal ambiguity and path dependency. As such, they are the most likely source of sustainable competitive advantage.

Although tangible assets have limited advantage-generating potential, even they can be enhanced by being firm-specific. For instance, specialised equipment and facilities that are not directly applicable to competitors are more opaque than standard capital assets. In terms of capabilities (Coff & Lavery (2001) call them *knowledge-based resources*), they are less useful if they are non firm-specific, an example of this being a key engineer or scientist with scarce skills who can, nevertheless, be hired away by competitors. Following this rationale, it becomes obvious that *systemic/knowledge-based resources* have the most potential as strategic assets. This is because they are isolating mechanisms with a high degree of causal ambiguity that makes them imperfectly imitable and imperfectly mobile. Companies should, therefore, invest in capabilities that are tacit: complex bundles of individual skills, assets and accumulated knowledge that are exercised through organisational processes.

In summary, resource heterogeneity creates economic rents and ex ante limits to competition ensure that the costs of acquiring the resources do not off-set the rents

earned. This enables competitive advantage to be achieved, but it may not be sustainable. In order to achieve sustainable competitive advantage, ex post limits to competition must also exist and the resources must be imperfectly mobile. Ex post limits to competition prevent the rents from being competed away (making them durable) and imperfect mobility ensures that valuable resources remain within the firm (the value is appropriated by the firm). Systemic/knowledge-based resources have a high degree of causal ambiguity and, as such, are a key isolating mechanism, allowing firms to protect their revenue streams and achieve sustainable competitive advantage.

2.3.3 Adopting the Resource Based Approach

In order for management to take advantage of competitively valuable resources, they must deliberately incorporate the resource-based approach into the strategic decision-making process of the organisation. Fahy (2000) sees this as a three-stage process of (i) resource identification; (ii) resource development and protection; and (iii) resource deployment. Resources only fulfil their advantage-generating potential when they are converted into something of value to customers and when they have been applied to industry or brought to market. Organisations can adopt defensive strategies of protecting and exploiting existing resources, by making them enduring, defensible and difficult to replicate. However, in order to achieve sustainable competitive advantage, firms need to adopt offensive strategies.

Chaharbaghi & Lynch (1999) develop this point by differentiating between *resource management*, which identifies the resource configuration best suited to the firm's intended strategy, and *resource development*, which introduces new resource configurations to suit emergent strategy. Relying on the former (optimising current resources) is a static approach which does not take into account the changing external environment and has the added danger that advantage-generating resources will eventually be copied. The latter, dynamic approach, on the other hand, involves developing new resources in order to create business opportunities by adapting to fresh challenges and changing markets.

Cox (1997) takes this a stage further by emphasising that business success is ultimately about entrepreneurship under dynamic and contingent circumstances, rather than

something called “management”. Cox puts forward six principles of business success and two of them are particularly relevant to this discussion. Firstly, the most appropriate strategy under all circumstances is to leverage those critical assets which can be owned and controlled. Secondly, it is more appropriate to develop ways of thinking about the criticality of assets than to develop knowledge of products and services.

Olavarrieta & Ellinger (1997) suggest that distinctive capabilities can be developed and enhanced through organisational learning. This comprises a four-step process of: (i) information acquisition through experience, search and observation; (ii) information distribution throughout the organisation; (iii) information interpretation and use, where it is important to challenge existing knowledge and mental models; and (iv) knowledge transmission and storage into an organisational memory of rules, procedures, routines, scripts, databases and files. This would be a way of capturing Cox’s entrepreneurial activity and converting it into something permanent and meaningful to the whole organisation.

Coff & Laverty (2001) also propose such a knowledge management approach and go on to suggest other types of investment that have the potential to create strategic assets: research and development, socialisation and training centres, building social networks and relationship-specific investments with individual customers and suppliers. These investments share a number of common themes, inasmuch as they have significant intangible components, they are unique and unfamiliar, they reflect long time horizons and they are systemic or team-based. It could be said, therefore, that the development of strategic assets is an advantage-generating process in itself.

2.3.4 The Market Based Approach

The resource-based perspective appears to be the predominant view of how firms achieve sustainable competitive advantage. However this was not always the case. In the 1980s, competitive strategy was based on industry analysis, driven by such writers as Porter (1980; 1985). Porter suggests that there are two central strategic issues for achieving high profitability: (i) the selection of attractive industries by using the five competitive forces model and (ii) the selection and achievement of a strong competitive position within that industry through pursuing an appropriate *generic strategy*.

The five forces model is a way of assessing a firm's competitive position. It does this by considering the relative *bargaining power* of suppliers and customers, the threat of potential *new entrants* or *substitute products*, the *barriers to entry*, and the degree of *competitive rivalry* among existing players. In choosing a generic strategy, firms have three choices. They can be a *cost leader*, by aiming to be the lowest cost producer in the industry, or a *differentiator*, by developing a product or service that is unique within that industry. Both of these approaches address a broad market. A *focused firm*, on the other hand, targets a narrow market segment and provides either low cost or differentiated goods or services for that segment only. Commonly quoted examples are Ford (cost leader), BMW (differentiator) and Morgan (focused firm) within the car industry for example.

According to Foss (1996), Porter places more emphasis on external opportunities and threats rather than internal strengths and weaknesses and sees the key capability of an organisation as the skill with which top management analyses its environment, reads signals, establishes commitment and positions the firm in general. As such, firm-specific components of competitive advantage are never seriously addressed and it is never really determined how underlying resources allow a firm to carry out its strategic ploys.

Olavarrieta & Ellinger (1997) take this further by stating that Porter's application of traditional industrial organisation economics fails to explain why firms participating in industries with the same level of attractiveness demonstrate differing performances or why firms participating in industries with different levels of attractiveness achieve similar performances. This has led researchers to suggest that the real sources of a firm's success are due to the organisation's firm-specific or idiosyncratic resources rather than its external environment. An empirical study by Rumelt (1991) appears to support this view in finding that business unit effects are significantly more important than industry effects in explaining companies' profitability.

Porter (1990) in his later work has made numerous ad-hoc adjustments to his thinking. The industrial organisation concept, where competitive advantage is deemed to be a matter of market power and entry deterrence, has been replaced by an essentially resource-based conception that competitive advantage is concerned with accumulating

and deploying asset bundles with superior efficiencies to product markets. Foss (1996) criticises these adjustments as *undisciplined eclecticism*, which are reactive to criticism rather than having an integrating and refining effect. Popper (1959) denounces ad-hoc adjustments when they are made to protect hypotheses from negative criticism and this certainly seems to be the case here, as rigorous models have been replaced by loose frameworks.

2.3.5 Resource Based Versus Market Based Approaches

It would be easy to enter into a discussion of the relative merits of the two approaches and conclude that the resource-based view has now replaced the market-based perspective, but this should be guarded against. Fahy (2000) contests that the vast majority of contributions related to the resource-based view have been of a conceptual rather than an empirical nature, with a result that many of the fundamental tenets still remain to be validated in the field. There would, therefore, appear to be scope for this research effort to make a contribution to this area of study.

Cox (1997) states that arguments about which is the predominant approach (he calls them the “intra-firm perspective” and the “inter-firm perspective”) create a false dichotomy between factors which must in practice be inextricably linked. Priem, Rasheed & Amirani (1997) see the resource-based approach as an extension of Porter’s value-based ideas and Henderson & Mitchell (1997) state that both organisation and competition are important in shaping strategy and performance. Collis & Montgomery (1995) also advocate this dual approach by stating that competitive advantage can be attributed to owning a valuable resource, but value is determined in the interplay with market forces. In this way, the resource-based perspective is seen as a means of bridging the gap between the internal and external environment.

Whilst there is a considerable amount of agreement on how market-based and firm-specific strategic perspectives link together, there is also some disagreement. For instance, Deligonul & Cavusgil (1997) posit that resource-based theory is focussed on short- and medium-term behaviour, while environmental factors only influence conduct and performance in the long-term. Foss (1996), on the other hand, asserts that industrial

organisation thinking is a short-run affair where it may be useful to *black box* a firm, whereas the resource-based perspective leads to long-term sustainability.

McGahan & Porter (1997) conducted a survey in order to evaluate whether industry effects or business unit effects were more important in explaining the variance in profitability between firms. Unlike previous research by Rumelt (1991), which covered only manufacturing companies and looked at one year's results, McGahan & Porter's study is more comprehensive. All economic sectors were reviewed within a longer time period, encompassing several phases of the business cycle. They found that industry effects have a greater bearing on performance than Rumelt indicated (19% as opposed to 8%) and put this discrepancy down to the limited scope of the earlier study. However, firm-specific effects are still the major influence on corporate performance (32%).

The debate over whether the resource-based view or the market-based approach is the most important in determining competitive advantage continues without reaching a clear conclusion. Recent studies by Goldman & Grinstein (2010), Voola & O'Cass (2010), Camison & Villar (2009), Ndofor, Sirmon & He (2009), and Wilson & Amine (2009) all confirm that both industry effects and resource effects are important in determining organisations' competitive performance. This outcome is recognised by incorporating both viewpoints when developing the *sourcing strategy and competitive advantage model* discussed in Section 2.11.

2.3.6 The Institutional Context

Oliver (1997) cautions against the wholesale adoption of the resource-based approach without the consideration of other factors. She puts forward two shortcomings of the resource-based view: (i) it has not examined the social context within which resource selection decisions are embedded (the firm's traditions, network ties and regulatory pressures) and (ii) it has not addressed the process of resource selection (how firm's make, or fail to make, rational resource choices in pursuit of economic rents).

Strategy researchers were slow in exploring these shortcomings and Amit & Shoemaker (1993) state that this was because doing so requires a cross-level approach. Most researchers have focussed instead on the description and categorisation of strategic assets

by their potential to generate an advantage. Oliver (1997) argues that a firm's sustainable competitive advantage depends on its ability to manage the institutional context of its resource decisions. She combines the institutional and resource-based views at three levels of analysis: the individual, the firm and inter-firm.

At the individual level, managerial choice is influenced, not just by resource-based determinants such as economic rationality (driven by motives of efficiency, effectiveness and profitability), but also by institutional determinants such as normative rationality (driven by historical precedent and social justification). At the firm level, resource selection is dependent on a combination of strategic industry factors (buyer and supplier power, intensity of competition, industry and market structure) and institutional factors, such as the level of political and cultural support for resource decisions. Finally, at the inter-firm level, firm heterogeneity is driven by factor market imperfections (barriers to imitation and substitution) as well as conformity pressures exerted by governments, professional associations and other external bodies that define behaviour.

Whereas the resource-based view assumes that economic motives drive resource accumulation decisions and economic factors in the firm's environment shape its conduct and outcome, the institutional view posits that these economic choices are constrained by a social framework of norms, values and taken for granted assumptions about what constitutes appropriate or acceptable behaviour ("the way we do things around here"). Oliver's model appears to be a useful construct as it combines the intra-firm, inter-firm and institutional perspectives. It seems entirely plausible that an organisation's ability to select and deploy advantage-generating resources and whether this in turn leads to sustainable competitive advantage is influenced and constrained by the market and social environment in which it operates.

Hunt & Morgan (1996) refer to a similar interplay between intra-firm, inter-firm and institutional factors when discussing their *resource-advantage theory*. They state that competitive resources are influenced by five environmental factors: (i) the societal resources on which firms draw; (ii) the societal institutions that frame the "rules of the game"; (iii) the actions of competitors; (iv) the behaviours of consumers; and (v) public policy decisions.

Coff & Lavery (2001) emphasise the organisational and individual barriers to pursuing a resource-based advantage. They see the organisational barriers to investing in strategic assets as comprising of five primary biases: (i) the bias towards tangible assets in traditional accounting practices; (ii) the bias towards certainty implicit in the analytical tools; (iii) the bias towards sequential processing and short-term time horizons arising from the annual nature of the investment cycle; (iv) the bias towards rewarding individual performance; and (v) the bias introduced by the power structure of the resource allocation process (finance professionals and shareholders hold sway and expect all investments to be quantifiable and certain).

Individual decision-making also thwarts strategic investment because normative models of decision-making are violated. Firstly, individuals use cognitive heuristics and biases in making decisions. These are short-cuts and rules of thumb that individuals find essential to cope with information processing demands. Using such an approach means that the future becomes an extrapolation of the past, but in dynamic environments the past is not a good indicator of the future. Secondly, individuals display tendencies towards risk and ambiguity avoidance and, since strategic assets are uncertain and ambiguous, they will tend to be undervalued. Finally, individuals have a temporal bias, in other words they adopt high discount rates and therefore prefer resources with immediate payoffs.

Coff & Lavery see the overcoming of these organisational and individual roadblocks as a far greater challenge than identifying advantage-generating resources in the first place. Management must make an effort to neutralise the organisational barriers and counteract the individual biases. Individual biases in particular are enduring and difficult to correct, therefore a continual process of reinforcement is required in order to ensure that the company leverages its competitively valuable resources without hindrance from structural and procedural characteristics of the resource allocation process and without undue influence from individual cognitive biases.

In summary, the ability of organisations to deploy advantage-generating resources successfully depends on its social and operational constraints. Recent studies by Bititci et al (2011), Gao, Murray & Kotabe (2010), Kelliher & Reinl (2009), Abhijit et al (2009), and Yang et al (2009) all confirm the importance of the institutional context, which has

therefore been incorporated into the *sourcing strategy and competitive advantage model* discussed in Section 2.11.

2.3.7 The Relational View

Traditional resource-based theory views the individual firm as the primary unit of analysis. This fails to recognise the important fact that the strengths and weaknesses of an individual firm are often linked to the characteristics of the network of supply relationships in which the firm is embedded. A firm's critical resources may therefore extend beyond its own boundaries. The *relational view* is a more recent perspective developed in particular by Dyer & Singh (1998) which acknowledges this. The approach identifies four important cooperative mechanisms that an organisation can adopt, which are related to buyer/supplier relationships and which can lead to sustainable competitive advantage: (i) joint investments in relationship-specific assets; (ii) substantial knowledge exchange; (iii) combining valuable scarce resources; and (iv) more effective governance mechanisms which lead to lower transaction costs.

The major differences between the resource-based approach and the relational view concern the unit of analysis, the source of rent, and the control and ownership of the rent-generating resources. The resource-based view has the individual firm as the unit of analysis, internal capabilities as the source of rents, and single-firm control and ownership of the rent-generating resources. The relational view, on the other hand, has the supply dyad or network as the unit of analysis, the buyer/supplier relationship as the source of rents, and joint control and ownership of the rent-generating resources.

Despite these differences, it is unfair to see the relational view as an alternative to the resource-based approach. The language used is indicative of its origins. "Firms that combine *resources* in *unique* ways may realise an advantage over competing firms who are unable to do so. Thus, *idiosyncratic* linkages may be a source of *relational rents* and competitive advantage" (Dyer & Singh, 1998, p 661); emphasis added. Furthermore, relational rent is defined as "a *supernormal profit* jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint *idiosyncratic* contributions of the specific alliance partners" (Dyer & Singh, 1998, p 662); again, emphasis added. Scarce resources, uniqueness, inimitability,

rents and supernormal profits are very much part of the resource-based vocabulary. The relational perspective should therefore be seen as an extension of rather than an alternative to the resource-based view, as it embodies its core principles and tenets.

Recent studies by Cao & Zhang (2011), Sanders, Autry & Gligor (2011), Srinivasan, Mukherjee & Gaur (2011), Gold, Seuring & Beske (2010), Liu, Ghauri & Sinkovics (2010), and Wittmann, Hunt & Arnett (2009) build on the importance of the relational view. Integrating resources with supply chain partners in a cooperative approach leads to systemic (relationship-specific), knowledge-based systems that are unique, have a high degree of causal ambiguity, and are difficult to copy, enabling relational rents to be achieved.

Although it is complementary to the resource-based approach, the relational view does have different implications for the sourcing strategies that firms should use to achieve higher profits. For example, according to the resource-based view, an individual firm should attempt to protect rather than share valuable proprietary knowledge in order to maintain competitive advantage. An effective sourcing strategy from a relational standpoint would be for firms to systematically share valuable knowledge with alliance partners in return for access to the partner's own store of knowledge. This is further discussed later in the chapter in relation to different sourcing strategies.

2.3.8 Conclusion

Whereas leanness and agility are prescriptive, operational approaches, the resource-based view attempts to put forward a theorised view of what leads to sustainable competitive advantage. Competitive advantage can be attributed to owning an advantage-generating resource, but whether it can be deployed and protected is determined by internal constraints and market forces. Resources only fulfil their advantage-generating potential when they are converted into something of value to customers and when they have been brought to market. It is essential, therefore, to consider both the market situation and institutional context when developing key resources. Furthermore, a firm's critical resources may extend beyond its own organisational boundaries. Developing integrated relationships with supply chain partners can lead to the generation of relational rents,

thus enabling a firm to achieve a sustainable competitive advantage that may not be possible by acting alone.

Although it has been possible to identify the theoretical factors that lead to sustainable competitive advantage, empirical research needs a means of operationalising these theoretical conditions. With this in mind, Collis & Montgomery (1995) put forward five tests that can be applied to resources in order to ascertain whether they are competitively valuable (i.e. achieve sustainable competitive advantage).

The first test is that of *inimitability*: whether a resource is difficult to copy. This can be achieved by uniqueness, path dependency (uniqueness created over time through the development path of the resource), causal ambiguity (competitors are thwarted because it is impossible to disentangle what the valuable resource is or how to re-create it), and economic deterrence (large investments). The second test is that of *durability*: how quickly the resource depreciates. The third test concerns *appropriability*. It is important that value can be appropriated by the company that owns the resource without having to pass that value on to customers or suppliers, for example. *Substitutability* is the fourth test: whether a unique resource can be replaced by an alternative. Finally, the resource must have *competitive superiority*. Advantage-generating resources should not be measured on whether they are core competences that the organisation does well, but on whether they achieve distinctive competence in relation to competitors.

Collis & Montgomery's five tests are a useful way of turning the theoretical concepts of the resource-based view into practical action. A derivation of the five tests is therefore used as part of the research methodology which is explained in more detail in Chapter Three.

2.4. The Power Regimes Approach

The power regimes approach has developed over the last ten years based on the work of the Centre for Business Strategy and Procurement (CBSP) at Birmingham University. Consistent with the resource-based perspective, the school argues that organisations can

only achieve sustainable competitive advantage through developing and protecting distinctive capabilities that are enduring and cannot be easily copied. Whether these advantage-generating resources can be deployed is determined by internal power relationships (thus acknowledging the organisational context), while their sustainability is dependent on the external power relationships between supply chain partners (thus taking into account the market-based approach and Porter's five forces). Only organisations that have a powerful position in the supply chain can appropriate value without having to pass it on to customers or suppliers.

The power regimes school, as its name would suggest, is concerned with the concept of power. The concept of power is based on economic principles of utility, scarcity, information asymmetry and switching costs. The extent to which these principles apply in any given business exchange will determine the balance of power between the parties. Furthermore, the power relationships that exist in the supply chain will dictate the type of approach to supply management adopted. Cox (1999) differentiates between the operational and strategic approach to supply management. Where organisations have little relative power, they tend to operate the former and are trapped into an innovation treadmill of continuous improvement, cost and waste reduction with little benefit to the organisation, as any value that is gained must be passed on to the more powerful customer. Those organisations that can exert power over their supply chain partners can, however, adopt the strategic approach by building defensible barriers to market entry, competing vertically as well as horizontally and appropriating value for themselves.

The power regimes school adopts a contingent approach to sourcing. Although sourcing situations are seen as varied and complex, they can be managed effectively by understanding the contingent circumstances and adopting an appropriate sourcing strategy.

According to the power regimes approach, there are four sourcing strategies open to an organisation. Which sourcing option to choose is dependent on whether the focus of the relationship between the buyer and supplier is reactive (based on market contestation) or proactive (based on collaboration and integration), and whether the scope is first-tier only or the whole supply chain (See Figure 2.2). The four sourcing options are discussed in the following sections.

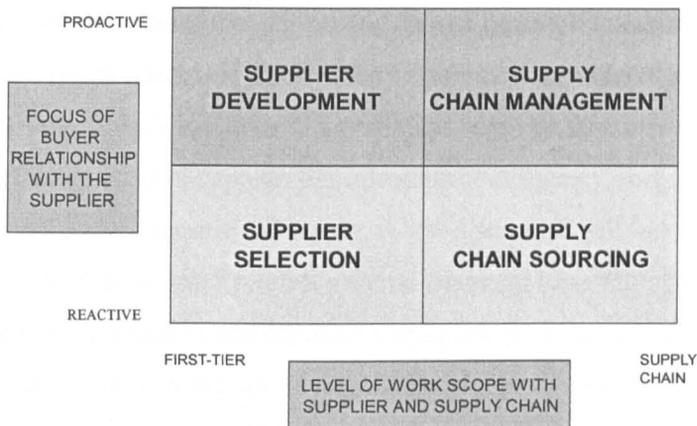


FIGURE 2.2: The Four Sourcing Options

Source: Cox et al, 2002

2.5. The First Sourcing Option: Supplier Selection

Supplier selection is a sourcing strategy where the buyer selects products and services from offerings made by suppliers currently operating in the market. An arms-length relationship exists between the buyer and the supplier, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. This sourcing strategy involves market analysis, supplier selection and performance monitoring of the first-tier supplier only (adapted from Cox et al, 2003).

2.5.1 New-Buy Situations: Supplier Appraisal

For new-buy situations, supplier selection can only be based on a general assessment of suppliers' potential, as information on past performance will not be available. This appraisal stage of the supplier selection process aims to verify which vendors have the capability, capacity, commitment and financial viability to warrant the placing of an order or to facilitate their inclusion as a preferred supplier.

Some of the factors that need to be considered during an appraisal exercise are the supplier's financial position, quality standards, customer profile, and plans for the future. The likelihood of being bought or sold should be ascertained, as this may affect the supplier's future plans and priorities. The potential provider should not be too reliant on any one customer or locked into a particular supplier. The buying organization must also ensure that a potential supplier has adequate contingency or disaster recovery plans in place to guarantee security of supply. A good supplier will have a sound business sense and attitude, a good track record, a sound financial base, suitable technical capability, a total quality orientation and efficient management processes. It will demonstrate effective purchasing of its own inputs, have good employee morale, effective logistics and a customer service mentality. These criteria will ensure that the chosen supplier has the resources and competences to meet the buying organisation's requirements.

Carter (1995) devised a pragmatic model for supplier appraisal which he dubbed the "7 C's" of effective supplier evaluation. This framework consists of *competency* (technical skills and processes), *capacity* (physical, human and financial resources), *commitment* (to the customer, quality, cost reduction and service), *control systems* (physical, human and financial controls), *cash resources and financial stability* (now and in the future), *cost* (in terms of total cost of ownership rather than lowest price), and *consistency* over time.

It is important to not just send out questionnaires to potential suppliers and accept their responses, but to gather real evidence. Checking the CVs, qualifications, attainments and experience of staff as well as the amount of investment in training will give some indication of the potential supplier's competency. Similarly, looking at order books, demand forecasts and resource plans can give an indication of capacity levels.

Commitment to quality can be evidenced by the existence of third party accreditations as well as the deployment of quality tools and continuous improvement programmes, and customer commitment can be demonstrated by talking to other buyers who have dealt with the provider. It is also wise to check stock turnover figures and the existence of budgets, performance management systems and information systems to ensure that effective controls are in place. Finally, cash resources and financial stability can be verified by reviewing balance sheets, profit and loss accounts, funds flow statements, and conducting ratio analyses, although a basis of comparison, such as previous years, industry standards or best in class competitors will be required to make the figures

meaningful. Evidence relating to total cost of ownership and consistency over time will be difficult to evidence, since an on-going relationship does not yet exist with the supplier, and this is where networking with other buying organizations may prove fruitful.

All this evidence-gathering is of course very time-consuming and expensive, thus the extent of the evaluation is likely to vary according to the degree of complexity and risk involved with the purchase. It would also be useful to weight the various factors in line with their relative importance. Strategic purchases will require extensive supplier appraisal with both short- and long-term factors being emphasized, whereas tactical purchases can make do with a slimmed-down appraisal of short-term criteria.

2.5.2 Re-Buy Situations: Supplier Evaluation

Supplier appraisals, based on an assessment of potential performance, are an appropriate form of selection for new-buy situations and as a means to qualify suppliers as appropriate to do business with. Where re-buy purchasing environments exist, however, perceptions and estimates can be replaced by hard facts. In these situations, supplier selection is based on an assessment of actual past performance. This is the role of supplier evaluation.

Supplier evaluation consists of decisions that are collective (users should be involved) and encompass multi-standards (suppliers should be evaluated against a range of relevant criteria). The evaluation criteria will be both qualitative and quantitative, although companies tend to focus on the latter (Kannan & Tan, 2003; Lee, Lee & Jeong, 2003). Price, delivery, quality and service are the four most commonly quoted generic evaluation criteria. Traditionally, price was seen as the most important factor, but quality and service are now cited as the ascendant dimensions. This view is consistent across a range of different industries and purchasing decisions (Simpson, Siguaw & White, 2002; Bharadwaj, 2004) and also holds across different national business cultures (Kannan & Tan, 2003). Furthermore, Choi & Hartley (1996) found that the evaluation criteria used does not vary significantly in relation to a company's position in the supply chain either.

Hoshyar & Lyth (1992) identified three types of evaluation criteria. *Critical criteria* are those factors that by their presence or absence preclude a particular supplier, regardless of other conditions that may exist, *objective criteria* can be evaluated in monetary terms, and *subjective criteria*, which are difficult to quantify. Critical criteria, if they exist, enable supplier selection decisions to be made without further consideration, but objective and subjective criteria need to be measured in accordance with a suitable form of supplier evaluation. Typical supplier evaluation methods are discussed below.

Categorical methods are simple inasmuch as they evaluate supplier performance against a range of factors according to measures of "good" (+), "neutral" (0) and "unsatisfactory" (-). The total score for each supplier is calculated and the one with the highest rating is selected. This approach lends some structure to the evaluation process, is inexpensive and allows operational personnel to contribute. However, categorical methods tend to be subjective and all factors are treated as equally important. This is the simplest but least precise of the supplier evaluation methods.

An enhancement to the categorical method is the *weight-oriented* approach. Factors are weighted in accordance with their relative importance and incorporated into the performance measure. This method recognizes that factors are not equally important, but the allocation of weightings can still be rather arbitrary.

As the supplier selection decision becomes more sophisticated, complexity can be a problem. Studies have shown that buyers find it difficult to simultaneously handle more than seven to nine factors in evaluating a purchasing decision (Bharadwaj, 2004). The *analytic hierarchy process* method mitigates this problem by providing a framework to cope with multiple criteria. The problem is structured in the form of a hierarchy to capture criteria and sub-criteria, which are weighted according to their relative importance. Lee, Lee & Jeong (2003) state that this is the most commonly used method of supplier evaluation and is ideal for assessing multiple subjective criteria.

Traditional approaches to supplier selection concentrate only on price. While the categorical, weight-oriented and analytic hierarchy process methods consider other factors, they tend to de-emphasise the costs associated with all aspects of supplier

performance and generally disregard internal costs. More sophisticated supplier evaluation methods therefore incorporate the total cost of ownership (TCO) principle.

TCO quantifies all costs associated with the purchasing process throughout the entire value chain of the firm. It goes beyond life cycle analysis, which focuses primarily on capital purchases and disregards pre-purchase costs. TCO also has an advantage over zero-based pricing and traditional cost-based supplier performance evaluation, as these approaches concentrate on the external cost of doing business with the supplier and largely ignore internal costs. TCO considers search and evaluation costs, acquisition costs and all other costs over the entire life of the purchase, such as those relating to service, quality, delivery, administration, communication, failure and maintenance.

Cost-ratio evaluation methods incorporate TCO principles and assess supplier performance by using tools of standard cost analysis. All the costs associated with each supplier are calculated (sales price plus internal operating costs in terms of quality, delivery and service elements). The internal costs are usually expressed as a percentage of the total value of the purchase and the supplier with the lowest net adjusted cost is deemed to be the preferred supplier. This method is appropriate for organizations pursuing cost leadership strategies, but the approach is complex and requires a comprehensive accounting system which is usually only found in larger companies. Another disadvantage is that performance measures are artificially expressed in the same units.

None of the evaluation methods outlined above provide a generally applicable methodology for combining multiple criteria into a single measure of supplier performance. Humphreys, Mak & Yeung (1998) therefore put forward an approach based on the mathematical technique of *dimensional analysis*. This combines several criteria of different dimensions and relative importance into a single, dimensionless entity for each supplier. The criteria can be expressed in different dimensions with the only restriction being that they are assigned ratio scale values.

The cost-ratio and dimensional analysis approaches incorporate a standard costing methodology with its classical representation of fixed and variable costs. However, activity-based costing (ABC), as its name suggests, uses an activity-based costing

hierarchy instead, where costs become variable at different levels in the organization. According to Degraeve & Roodhooft (2000), there are three activity levels of purchasing. *Supplier level activities* consist of search, verification and management tasks. This may include quality audits in evaluating suppliers, a dedicated purchasing manager and any additional research and development activities due to using a particular supplier. *Order level activities* consist of ordering, transporting, receiving and invoicing, while *unit level activities* refer to the price paid, internal and external failure and inventory holding. All of these activities incur costs to the organization. Repeat purchases incur most costs at the order and unit levels, whereas first-time buys do so mostly at the supplier level. The supplier level costs are often underestimated or overlooked by supplier selection models, but the ABC approach captures costs at all purchasing activity levels and enables an organization to determine its cost drivers.

Ellram (1995) sees the utilisation of TCO and ABC principles as the critical link in supplier evaluation and both are included in the *mathematical optimization* method, which is the most sophisticated form of supplier selection and evaluation. These mathematical programming models not only include quantitative and qualitative criteria, but also select several suppliers in order to maximize supply offerings. The approach determines how many and which suppliers should be used along with the relative size of their orders, after taking into account buyer and supplier constraints.

Degraeve, Labro & Roodhooft (2000) conclude that mathematical programming models perform better than single-item models, as the latter fail to take into account the interdependencies of purchasing activities. Furthermore, the total cost approach incorporated into the mathematical programming models enable them to outperform simple rating methods, as the former is more objective. Mathematical programming models should incorporate inventory management criteria, as trade-off decisions in this area will have an effect on the total cost and hence the selection decision. For instance, the issue of quantity discounts versus inventory holding costs will affect the optimum size of order and the trade-off between unit price and order costs will determine the frequency of order. Furthermore, it is not rewarding to fix in advance the number of suppliers to use, as the optimal number will vary.

2.5.3 Mathematical Programming Models: A Case Example

Degraeve, Labro & Roodhooft (2004) have devised a mathematical programming model that has been used successfully within a real purchasing environment. The purchasing of airlines tickets at Alcatel Bell represents a spend of \$16.7m with 34 airlines and 56 destinations. Due to the vast amount of discount scheme combinations offered by the numerous airlines, it is impossible for a human decision-maker to fully exploit the opportunities offered. The complexity of the airline industry that continuously devises new pricing strategies adds to the problem. The available discount schemes are considered simultaneously, combined with other criteria, and optimized from the buyer's perspective.

The airline business was researched extensively from the point of view of the airline itself: scheduling of flights, pricing strategies, placement of hubs, crew allocation etc. Total costs were identified and allocated according to the activity-based costing hierarchy. Activities were considered at the three levels previously mentioned: (i) the supplier (airline) level, (ii) the order level (tickets were not grouped and costs are therefore incurred every time a ticket is bought), and (iii) the unit level (return trip to the destination). There is a recognition that tickets may be sold at an alliance level in the future, thus introducing a higher activity level to the model which can easily be incorporated into the design.

As well as the price of the discounted ticket, five other criteria were also considered, with the associated costs being allocated to the relevant activity level. The first such element is the cost of managing the relationship with the airline, which is currently incurred at the airline level, but may occur at alliance level in the future. The other four criteria are all unit level costs: lost wage costs of the buyer's employees if a flight is longer than the shortest possible; the commission of the agent, which varies and is included in the ticket price, but flows back to the buyer under the fixed management fee arrangement; flight flexibility (airlines have different number of flights at various times to each destination); and destination coverage (not all airlines fly to all destinations).

Other criteria were not included in the model, as they were the same or assumed to be the same for all purchases. These were the ordering and invoicing costs, the payment terms,

the agency fixed annual fee and the quality of meals. Criteria relating to punctuality and delays would obviously be useful additions, but they were not included due to difficulties in obtaining objective data. Finally, frequent flyer programmes were not incorporated as a variable because the benefits accrue to the individual rather than the firm.

The mathematical programming model has proved to be both strategically and operationally valuable, with savings of 19.5% cited by management at Alcatel Bell. It appears to be a useful way of selecting suppliers in a complex and repeatable purchasing environment.

2.5.4 Problems with Supplier Evaluation Approaches

Although there is a number of supplier evaluation methods available, as demonstrated by the preceding discussion, Simpson, Sigauw & White (2002) found that only half of the firms they surveyed had formal supplier evaluation methods in place. Furthermore, most of the studies on supplier evaluation concentrate on the perceived importance of evaluation criteria, rather than how suppliers are actually chosen. Verma & Pullman (1998) looked at this issue and found a large gap between perception and reality. Managers say that quality is the most important criteria, but most supplier selection decisions are still based on price. This demonstrates that operating practices in organizations are not necessarily consistent with their strategic priorities. Furthermore, Choi & Hartley (1996) found that supplier evaluation systems do not adequately incorporate issues such as the closeness of the relationship and continuous improvement techniques.

Criticisms of supplier evaluation systems can be summarized under five headings. First, they evaluate existing performance only, which makes them backward-looking. Second, they assess the supplier's performance, but do not consider the buyer/supplier relationship, which is often a contributory factor to that performance. Third, they do not indicate the investment requirements for improving performance, which makes it difficult to assess whether it is cost effective to pursue such improvements. Fourth, there is no "voice of the customer" in terms of identifying what their generic wants are. Fifth, the evaluation is a one-way process with poor performance being the fault of the supplier, whereas it is often the case that the buyer influences that performance by their own

actions with regard to poor specifications, changing their mind, not knowing what they want and so on. Overall, most systems treat suppliers as associates, with the focus of the evaluation being on performance issues such as quality, cost and delivery, and improvement benefits accruing to the buyer only.

Nissan has developed a different kind of supplier evaluation system, which treats suppliers as partners. The focus of the evaluation is on capability issues and two-way information flows. The long-term is considered by strategically aligning the supply base with the five-year plans of the buyer and improvement benefits are jointly shared. Nissan's system enables suppliers to be classified according to their capabilities, aligns them with the key business drivers of the supply chain, acts as a blueprint for future purchasing strategies, and serves as an indicator for supplier development opportunities. It goes some way towards addressing the criticisms leveled at supplier evaluation systems previously mentioned.

In a similar vein, Lamming et al (1996) devised a relationship evaluation tool which was later commercially developed by A T Kearney and used successfully in the aerospace industry. It is a spreadsheet application based on a hierarchy of criteria. Five categories are sub-divided into thirty-six weighted criteria which act as the measures of the relationship. The measurement process is two-way and encompasses a "no-blame" culture, with cross-functional and inter-company teams carrying out the evaluation. Identified development opportunities are appraised by means of a cost/benefit analysis to ensure that they are acceptable and feasible, and an agreed action plan drawn up.

2.5.5 Appropriateness in Supplier Evaluation

Nissan's supplier evaluation system and the relationship evaluation tool of Lamming et al were devised for the automotive and aerospace industries respectively, where long-term, collaborative relationships are required and suppliers therefore need to be both competent and congruent. However, there are many other situations where the purchasing decision is based purely on market contestation. In this short-term, transactional environment suppliers need to be competent but not necessarily congruent and traditional approaches based on price, delivery, quality and service may well be adequate.

It follows from this argument that different types of supplier selection approaches are likely to be appropriate for different purchasing environments. Masella & Rangone (2000) propose a contingency approach to the design of vendor selection systems that recognizes this (see Figure 2.3).

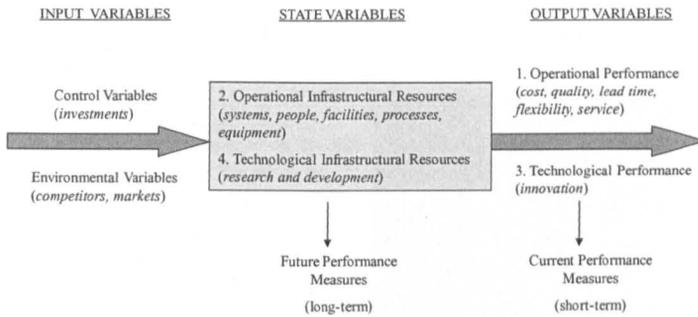


FIGURE 2.3: Measurement Criteria for a Contingent Supplier Selection System

Adapted from: Masella & Rangone (2000)

Evaluation criteria is divided into three sets of variables which are consistent with the input, output and process designations of a typical operations system. *Input variables* consist of control factors (investments) and environmental factors (competitors, markets); *output variables* comprise criteria in terms of operational performance (cost, quality, lead time, flexibility and service) and technological performance (innovation); *state variables* are concerned with operational infrastructure resources (systems, people, facilities, processes and equipment) as well as technological infrastructure resources (research and development).

Measurement systems should be concerned with outputs rather than inputs, therefore the input variables are not evaluated, although it is useful to know what the inputs are as they are the drivers of short-term performance. The current performance of suppliers can be determined by measuring the output variables. However, in order to establish the future potential of suppliers, it is more useful to measure the state variables, as these infrastructure resources drive long-term performance. For instance, the quality of existing people and systems along with the level of research undertaken is likely to be a good

indicator of future performance. The supplier evaluation criteria to be measured therefore depend on whether the buyer wants to assess only the current performance of the supplier or whether their future potential is also a concern. This will be dictated by the type of relationship that is required for a particular purchasing environment.

Masella & Rangone (2000) put forward four types of buyer/supplier relationship, based on the time horizon of the relationship and the level of integration required (Figure 2.4).

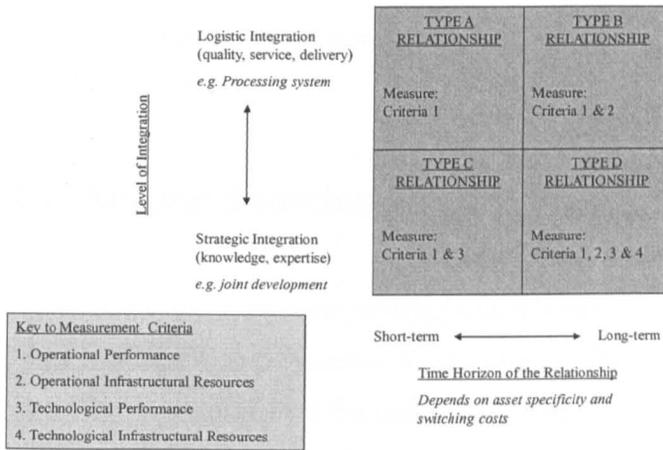


FIGURE 2.4: Integrating Measurement Criteria with Relationship Types

Adapted from: Masella & Rangone (2000)

Relationships can be either short- or long-term (dependent on the degree of asset specificity and switching costs) and their aim can be logistic integration based on operational factors such as quality, service and delivery (e.g. a JIT system) or strategic integration based on knowledge and expertise (such as joint development initiatives). *Type A* relationships (short-term logistic integration) only require the supplier's operational performance to be measured; *Type B* relationships (long-term logistic integration) should focus on both operational and technological performance; *Type C* relationships (short-term strategic integration) should emphasise operational performance and operational infrastructure resource measures; and, finally, *Type D* relationships (long-term strategic integration) require all four criteria to be measured (operational performance, technological performance, operational infrastructure resources and technological infrastructure resources), since both the current and future competence of a supplier and its strategic congruence is important to the buying organisation.

In conclusion, the Masella & Rangone model appears to be a useful way of establishing the type of supplier selection approach to be adopted and the criteria to be used, based on the prevailing circumstances and the requirements of the buyer/supplier relationship. The time horizon of the relationship determines the type of selection: short-term relationships (Type A and C) require a supplier evaluation approach, whereas long-term relationships (Type B and D) need more of a supplier appraisal emphasis. Furthermore, the level of integration determines the criteria that should be measured: operational factors only in the case of logistical integration (Types A and B) and both operational and technological factors in the case of strategic integration (Types C and D).

2.6. The Second Sourcing Option: Supply Chain Sourcing

Supply chain sourcing is a sourcing strategy which is similar to supplier selection, but the buyer is now involved in understanding the structure of the supply chain and the opportunities for leverage beyond the first-tier supplier (Cox et al, 2003).

Since supply chain sourcing entails the buyer selecting products and services from offerings made by suppliers currently operating in the market, most of the issues concerning supplier selection covered previously are relevant. Both sourcing strategies are based on market contestation. However, since the buyer is involved with market analysis, supplier selection and performance monitoring across the whole supply chain, the time and effort required for supply chain sourcing is likely to be greater than for supplier selection. Supply chain sourcing may be adopted in order to exert more leverage over an upstream supplier than the first-tier provider can achieve or where there is a wish to retain greater control over supplier selection decisions throughout the supply chain.

2.7. Reactive Sourcing Strategies and Sustainable Competitive Advantage

Supplier selection and supply chain sourcing are reactive sourcing strategies inasmuch as they are based on market contestation and arms-length relations with suppliers.

Williamson (1985) outlines four characteristics of arms-length relations: (i) non-specific asset investments; (ii) minimal information exchange; (iii) separable technological and functional systems within each firm with a low level of interdependence; and (v) low switching costs with minimal investment in governance mechanisms. Under these conditions it is easy for firms to switch trading partners with little penalty, because other sellers offer virtually identical products.

Dyer & Singh (1998) indicate that sourcing strategies based on arms-length relations are incapable of generating rents because there is nothing idiosyncratic about the exchange relationship that enables the two parties to generate profits above and beyond what other buyer/seller combinations can generate. The relationships are not rare or difficult to imitate and buyers can only achieve differential advantage if they bring greater bargaining power to the table.

Ramsay (2001) concurs with this view by identifying three circumstances where reactive sourcing strategies are potentially strategic but cannot be sustained: (i) identifying unknown suppliers; (ii) controlling and denying suppliers to competitors (through exclusivity contracts or contracts that tie up capacity); and (iii) buying in difficult to imitate ways (by negotiating prices, quality levels or performance characteristics that other buyers cannot achieve). These are all attempts to make the sourcing strategy unique and conform to Peteraf's (1993) first and second cornerstones, which were discussed in Chapter One: *resource heterogeneity* (firms have varying capabilities) and *ex ante limits to competition* (first mover advantage). They are therefore only likely to achieve short-term competitive advantage.

Ensuring the durability of these initiatives is likely to be difficult. Competitors may soon become aware of the previously unknown suppliers, the initiatives to control suppliers and deny them to competitors is likely to be resisted by the suppliers as they may not be in their best interests, and buying in inimitable ways may not be feasible in competitive markets. Furthermore, skilled purchasing professionals who can achieve some of these advantages may be poached away by other organisations. The strategies may not, therefore, achieve Peteraf's (1993) third and fourth cornerstones: *ex post limits to competition* may not exist (because the strategies can be substituted or copied) and *imperfect mobility* may not prevail (because the activities are not firm-specific). This is

why Ramsay (2001) concludes that the initiatives are not likely to be sustainable in the long-term and can only be achieved by large organisations with plenty of leverage over suppliers.

In summary, reactive sourcing strategies encompass a sourcing process that is relatively simple, open and transparent. Although the sourcing strategies may generate competitive advantage in the short-term, they can be copied easily with minimal investment and are therefore unlikely to be competitively superior in the long-term. Supply chain sourcing is slightly more complex and requires additional resources, as it involves looking beyond the first-tier supplier and making sourcing decisions throughout the supply chain, thus giving it some degree of durability, but overall the two sourcing options appear to have limited potential to achieve sustainable competitive advantage

Referring to Collis & Montgomery's (1995) five tests of sustainability, reactive sourcing strategies are not *inimitable*, they are not *durable*, and they are *substitutable*. They may be *appropriable* if the buying organisation is in a dominant position and/or a healthy competitive market exists, but the value generated is not likely to be greater than that achieved by other buyers, thus ensuring that reactive sourcing strategies are not *competitively superior* in the long-term.

Despite the seemingly limited advantage-generating potential of reactive sourcing strategies, companies that adopt them can still achieve sustainable competitive advantage. However, it is likely that the success of the organization in these cases is not due to the sourcing strategy itself, but can be attributed to some other isolating mechanism, such as a monopoly position, property rights, size of business, economies of scale, reputation effects, technical or commercial knowledge, and so on. Large company size, and hence leverage, appears to be a particular attribute in terms of sourcing, being mentioned by both Dyer & Singh (1998) and Ramsay (2001).

Furthermore, reactive sourcing is a low-cost, low-risk approach requiring little investment and which incurs minimal sunk and switching costs. This is in contrast to proactive sourcing strategies which are discussed in the following sections.

2.8. The Third Sourcing Option: Supplier Development

2.8.1 Definition and Scope

According to Cox et al (2003), *supplier development* is a sourcing strategy where, after initial market analysis and supplier selection, the buyer works on a continuous basis with the first-tier supplier only. The design and specification of the product or service, now and in the future, is determined by the buyer or is a joint effort. There are high levels of collaboration and integration between the buyer and the supplier, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. However, others see supplier development as something much broader in scope. Humphreys, Li & Chan (2004) epitomise this looser approach by defining supplier development as “any effort of a buying firm to increase the performance and capabilities of the supplier”.

Krause, Scannell & Calantone (2000) use this broader definition when they refer to supplier development activities differing in the degree to which the buying firm invests in the effort. The buyer can use either *competitive pressure* or *direct involvement activities* to improve supplier performance. Competitive pressure involves supplier incentives and assessment based on the comparative use of competition with other suppliers, while direct involvement activities, such as supplier training, involve the commitment of the buying firm to invest directly in the supplier. Cox et al (2003) are clearly referring to direct involvement activities in their definition of supplier development.

Classifying both *competitive pressure* and *direct involvement activities* as supplier development is rather misleading and results in a number of confusions and contradictions in the literature. Cox et al (2003) clearly differentiate between proactive sourcing strategies based on collaboration and integration on the one hand and reactive approaches based on market contestation, but other writers are not so clear. Using market forces to drive functionality and cost improvements should not be seen as supplier development at all, as it does not involve any development activity, but a number of writers do not make this differentiation. This may be because supplier development usually starts with some form of supplier evaluation, which is essentially a reactive tool.

Supplier evaluation certainly is one factor in a supplier development programme, but it is the type of information that is captured and how it is subsequently used that determines whether proactive or reactive sourcing strategies take place. This can be demonstrated by referring to the contingency approach to supplier evaluation put forward by Masella & Rangone (2000) and shown in Figure 2.3. Measuring output variables and concentrating on short-term performance improvement by using competitive pressure is reactive, whereas measuring state variables and focusing on long-term capability improvement by investing in the supplier is proactive. Talluri & Narasimman (2004) suggest that suppliers that score highly on performance but low on some capabilities are candidates for supplier development initiatives focused on their weak areas. Furthermore, those that score highly on both performance and capability can be used as benchmarks, with their expertise being utilised as part of the supplier development programme. Development activities should not be countenanced, of course, for those suppliers that score badly on both counts, since these are candidates for pruning.

In conclusion, there are two distinct aspects to the broader definition of supplier development, competition and collaboration, and they need to be clearly differentiated. The terms proactive or collaborative supplier development on the one hand and reactive or competitive supplier development on the other are therefore used in the following discussion where clarification is necessary. Using competitive pressure when undertaking supplier development is useful to avoid lock-in, complacency and opportunism, but it is the collaborative aspect that is the true rationale behind the concept. The aim of supplier development is to work closely with suppliers in order to achieve functionality and cost improvements over and above those that can be gained through market contestation.

2.8.2 Supplier Development and its Effect on Performance

Humphreys, Li & Chan (2004) conducted research into what makes supplier development successful. They broke supplier development initiatives down into a number of individual elements which they grouped under two headings: *transaction-specific investments* and *infrastructure factors*. Each element was then evaluated against specific *performance outcomes* in order to determine their affect.

The transaction-specific investment factors (direct supplier development) identified were: increasing supplier performance goals; providing the supplier with training; providing the supplier with equipment, technological support and investments; exchanging personnel between the two organisations; evaluating supplier performance; and recognising supplier progress in the form of rewards. The infrastructure factors (the environment that supports effective use of transaction-specific supplier development activities) considered were: the clarity of long-term strategic objectives; effective communication (open, frequent and early involvement); long-term commitment (relationship continuity and partnerships); top management support; careful selection and evaluation of suppliers; philosophical and strategic capability; and trust (to safeguard against opportunism). Finally, the performance outcomes measured were: supplier performance improvement (quality, delivery, cost etc); buyer competitive advantage improvement (market share gains, quality improvement, cost reduction, and faster product development); and buyer/supplier relationship improvement (more cooperative and long-lasting).

The results of the study show that it is mainly the transaction-specific factors that affect the performance outcomes of supplier development. Of the infrastructure factors, only trust is seen as having significant influence over all three performance outcomes. Clarity of strategic objectives is also seen as important for supplier performance improvement and buyer competitive advantage improvement, while effective communication is not surprisingly significant for improving the buyer/supplier relationship. It is the transaction-specific factors, though, that are the major predictors of the performance of supplier development. Interestingly, long-term commitment is not seen as a significant influence.

The findings of the study must be put into context in order to understand them fully. It is based on the Hong Kong/ China electronics industry, which is very competitive and entrepreneurial. In this environment, the formation of partnerships becomes of secondary importance, as it would limit entrepreneurial activity and consequently increase risk and management costs. This indicates that it is the market that is driving functionality and cost improvements in this environment, rather than long-term integration and collaboration between supply chain partners. The activities described in the study do not therefore conform to the Cox et al (2003) definition of proactive supplier development.

The prevalence of trust as a performance indicator may also be explained by context. Chinese business dealings exhibit a strong degree of *guanxi*, which is “the drawing on networks or connections in order to secure personal favours in personal or business relations” (Tsang, 1998). This leads to an institutional environment of relational trust, which underpins supplier performance improvement in this context but may not necessarily do so in other business situations.

The results of the study by Humphreys, Li & Chan show that it is mainly the transaction-specific factors that affect the performance outcomes of supplier development. This is confirmed by Krause, Scannell & Calantone (2000), who found that direct involvement activities, where the buying firm internalises a significant amount of the supplier development effort, plays a critical role in performance improvement. Both of these studies demonstrate that it is the proactive elements of supplier development that influence supplier performance.

Supplier development requires communication between the buyer and supplier and Prahinski and Benton (2004) looked at the effect that communication strategies have on supplier performance. They identified three different communication strategies: (i) indirect influence, (ii) formality and (iii) feedback. *Indirect influence strategies*, such as education, training, and site visits, aim to change the recipient’s underlying beliefs and attitudes; *formality* refers to the communication of supplier evaluations through structured rules and fixed procedures; and *feedback* consists of a two-way discussion of the buying firm’s evaluation of a supplier’s performance. The study finds that none of the communication strategies had a significant impact on supplier performance unless the supplier is committed to the buyer. This demonstrates the importance of having a congruent supplier, who sees the buyer as a key account customer. If the supplier is not committed to the buyer, then no amount of supplier development will increase performance. If supplier development is to be undertaken, it is important for buyers to focus only on suppliers that are committed to the relationship and to take steps to ensure that they are the customer of choice for that supplier.

Another interesting aspect of the study is related to the supplier’s perception of the relationship. Formality and feedback had a positive impact on the supplier’s perception of the relationship, while indirect influence strategies did not. Influence strategies are

resource intensive and buyers may therefore expend significant time and effort on communication strategies that do not necessarily benefit the relationship, let alone improve supplier performance. The study indicates that choosing a congruent supplier and adopting formality and feedback approaches may be more effective than trying to influence their underlying values and beliefs. The reason for this can perhaps be explained by Donaldson & O'Toole (2000), who differentiate between actions and beliefs in relationships. They found that only in situations of buyer/ supplier interdependence (*bilateral relationships*) would there be a need to consider beliefs as well as actions. In *dominant partner* relationships, a focus on actions only is more likely to occur.

Cox et al (2002) make a similar point by differentiating between the operational and commercial elements of a relationship. *Adversarial collaborative relationships*, which are similar to Donaldson & O'Toole's dominant partner relationships and Masella & Rangone's Type B relationships, entail the buyer working collaboratively with the supplier at an operational level to increase value, but competing with them commercially in order to appropriate for themselves as much of this value as possible. Nalebuff & Brandenburger (1997) refer to this mix of cooperation and competition as a *coopetition business strategy*. *Non-adversarial collaborative relationships*, on the other hand, which are similar to Donaldson & O'Toole's bilateral relationships and Masella & Rangone's Type D relationships, entail close operational working and the equitable sharing of value at the commercial level. This is likely to occur in situations where the buyer and supplier are interdependent with each other.

In conclusion, it can be argued that supplier development will only lead to improved performance where the supplier is committed to the relationship, in situations of interdependence or buyer dominance, for instance. Furthermore, a supplier is committed to a buyer either because they want to be (interdependence), in which case commercial beliefs, strategic integration and operational actions are all important considerations, or because they have to be (buyer dominance), where the buyer can rely on operational actions and logistical integration to drive performance improvement.

2.8.3 Implementing Supplier Development

Hartley & Choi (1996) identified five common steps in the implementation of supplier development: gaining commitment from the supplier's top management; identifying a leader in the supplier's organisation; forming a capable buyer/ supplier development team; implementing data-driven changes; and demonstrating success.

Quayle (2000) contends that supplier development can act as a catalyst for change within suppliers, particularly for small and medium enterprises that are often the target of such activities. Many of these suppliers would like to improve their processes and systems, but frequently find themselves caught up in day-to-day activities that prevent them from doing so. However, when a customer wants to undertake supplier development, the supplier usually manages to accommodate this without detriment to their operational goals. Furthermore, as an outsider looking in, the customer can provide a fresh perspective that challenges the underlying assumptions of the supplying organisation. The customer legitimises the need for change and acts as a facilitator to overcome inertia.

Burnes & Whittle (1995) put forward a number of elements that lead to successful supplier development: a long-term commitment; both buyers and suppliers to be proactive; both parties to integrate key functions and activities; a commitment to developing and maintaining cooperative and close relationships; a clear and well-structured framework for determining cost, price and profit for both sides; a win-win philosophy – both parties must stand to gain from the supplier development approach; and continuous improvement in all spheres of their activities. These clearly relate to collaborative supplier development approaches rather than the competitive variety.

Further to this, Quayle (2000) outlines a number of stages that take place in supplier development from the buying organisation perspective. First, internal acceptance of what is to be undertaken must be gained. Second, suppliers who need to be improved must be identified, but they must also be appropriate to do business with. It is often more beneficial to develop the competence of a congruent supplier than it is to do business with a highly competent but dominant supplier who is not aligned with the buyer's strategic objectives. Experience suggests that fifteen suppliers is an optimum number to facilitate development activity. There should be a mix of both existing and potential

suppliers in order to maintain a competitive element, and they should be drawn from different supply tiers so that best practice does not end at the first tier but is disseminated throughout the supply chain. John Deere & Co uses three criteria that a supplier must meet in order to be considered for supplier development: the presence of a critical technology, an intent to form a long-term business relationship, and a genuine desire to make improvements (SS&M Report, July 2002).

Once appropriate suppliers have been chosen, a supplier conference, led by purchasing, should be held to gain acceptance from suppliers. Suppliers should be benchmarked against best in class and action plans can then be formulated with the suppliers, showing what they need to achieve and how this can be facilitated. Supplier associations can be used to focus coordination and development efforts. Within the supplier association framework, seminars and visits may be arranged as necessary, which will give the buying organisation an opportunity to share its future strategic direction. Finally, it is essential that supplier progress is measured regularly, perhaps on a monthly basis.

Evans & Jukes (2000) found that two essential requirements for success in the automotive industry were the close collaboration between the product development teams of the buyer and supplier and the provision of top management support to internalise necessary improvements. This enabled supplier development initiatives to generate substantial savings in terms of development time (30%), development costs (40%) and total costs (30%). Both parties need to implement joint team-working initiatives and align their development processes together. Having the right balance of people in the supplier development teams is very important. Dell Corporation states that managers involved in supplier development activities must be senior enough to make things happen but junior enough to know where the problems are (SS&M Report, August 2002).

2.8.4 Supplier Development Initiatives

Manufacturing companies undertake more supplier development activities than do service organisations. Krause & Scannel (2002) found that service firms tend to rely on the competitive pressure of market forces to improve supplier performance, whereas product-based firms use assessment, incentives and direct involvement. This is probably due to a requirement for the supply inputs of manufacturing companies to be

incorporated into a finished good, thus requiring greater levels of integration and collaboration with suppliers than is required for service firms, thus providing more justification for resource intensive supplier development. Service firm inputs have low levels of asset specificity, making the prospect of switching suppliers more feasible and consequently competitive pressure can be used to make suppliers improve. However, this reliance on market forces may be problematic for service organisations, particularly in cases where integration of complex IT systems is required, and may explain why so many problems occur for this type of purchase in the public sector, for instance.

Supplier development initiatives were launched in the aerospace industry in 1995. The Supply Chain Relationships in Aerospace (SCRIA) initiative involved 110 prime contractors with the aim of working together, developing more competitive products and adding value. The initiative achieved continuous improvement, better supplier relationships and increased market share through cross-functional joint development teams, workshops and supplier conferences, codes of practice, dissemination of academic research, briefings to top management, the appointment of "champions", and use of the relationship evaluation tool already discussed in the section on supplier selection.

Nissan's Cogent supplier development programme was launched in the same year. Before this initiative, Nissan's suppliers were either designing products to customer specification without innovation or were coming up with "blue sky" ideas without an application. The Cogent programme aimed to improve the design and development skills of the first-tier suppliers through workshops, open two-way communication, and structured improvement programmes. Cranfield University acted as a third-party facilitator and the initiative was subsequently drilled down to the second- and third-tier suppliers (Becham, 1999).

The involvement of the whole supply chain in supplier development was also a major concern for Rover when implementing a supplier development programme. Suppliers were initially put into four distinct groups. Those who were deemed to be world-class were placed in the "mature" category. The second group consisted of those learning what had to be done to become world-class and the third category comprised those suppliers that realised they had to improve but were not sure how to go about it. The final group of suppliers was dismissed as those that had no idea that they needed to improve, let alone

what had to be done. Initiatives were then implemented with the aim of moving the second- and third-level suppliers to world-class status. These initiatives included supplier development teams, supplier associations, the use of supplier excellence awards, and joint development plans based on benchmarked best practice. New model development time was reduced from 50 to 39 months as a direct result of Rover's supplier development programme.

Supplier associations are often used as a means to focus development efforts. A supplier association can be defined as a mutually-benefiting group of a company's most important suppliers brought together on a regular basis in order to achieve strategic and operational alignment through the development of awareness, education and implementation programmes designed to achieve both radical and incremental improvements (Hines & Rich, 1998). They usually consist of an executive group and a separate operational group. The executive group comprises senior managers and strategists who meet infrequently to exchange market intelligence, compare strategies, set direction and rate of improvements, and to deploy resources accordingly. The operational group has regular meeting and has a remit to synthesise and implement practices and learn from experience. Many benefits have been achieved by working closely with suppliers in this way, but it needs time for the group to perform. Mature groups often spin off "daughter" groups once a certain level of competence has been achieved.

Supplier associations originated in Japan. A typical Japanese supplier association consists of top management group meetings, quality awards, technology development support, one-to-one assistance, quality audits, and workshops focusing on automation, logistics and production. The Japanese model has over the years been adapted to suit the European context by the inclusion of non-production suppliers (tool-makers and logistics providers, for example), a more democratic operating procedure involving joint decision-making, and outside facilitation. This is because suppliers tend to be more independent in Europe, whereas in Japan they are either subservient to the buying organisation or part of the same group of companies.

2.8.5 Conclusion

In conclusion, supplier development comprises competitive and collaborative elements. Although the competitive elements may limit supplier complacency and opportunism, it is the transaction-specific elements that have the most profound effect on supplier performance. This is because proactive supplier development entails direct involvement activities and collaborative relationships based on integration and adaptation. However, the positive effects of supplier development will only be realised if the supplier is committed to the relationship. It is therefore essential to ensure that suppliers involved in supplier development initiatives have strategic objectives that are congruent with those of the buying organisation.

2.9. The Fourth Sourcing Option: Supply Chain Management

2.9.1 Definition and Scope

There is a confusing array of definitions in the literature relating to supply chain management which makes the study of the subject difficult. Day (1999) found that early references to supply chain management were *hard/tight* (definition-based and concerned with logistics, production planning and inventory control), whilst later approaches incorporated *soft/loose* elements as well (a more fluid approach related to partnerships, power, trust and social aspects).

Croom, Romano & Giannakis (1999) see supply chain management as an *exchange process*, whereby organisations exchange physical assets, information or knowledge. They also found that the literature is dominated by *empirical/descriptive* approaches with a lack of generalisable, theoretical models. This is confirmed by Lummus & Vokurka (1999), who found that organisations tend to implement specific supply chain initiatives rather than following an overall supply chain management concept.

Chandra & Kumar (2000) put forward four different interpretations of what supply chain management may be: an arrangement to manage suppliers of products and services; the

efficient management of demand and flow of products and services; a philosophy for conducting business; or a strategy to gain competitive advantage through co-ordination and synchronization of the actions of supply chain members.

According to Guinipero and Brand (1996), supply chain management has evolved into three typologies, represented by different writers: the flow of goods approach; the flow of goods and information approach; and the integrative value added approach. Any worthwhile definition of supply chain management should incorporate all of these aspects.

Adopting supply chain management results in the forming of partnerships between companies and their suppliers. However, Kanji & Wong (1999) criticize many of the supply chain management models for focusing only on working closely with suppliers with a view to providing a high service level to customers and suggest a broader scope incorporating *total quality management* and *business excellence* principles. They state that other fundamental issues should be covered, such as the leadership's influence on supply chain relationships, the building of a cooperative and quality culture, ways to develop close relationships, initiatives to improve continuously, managing processes other than logistics, and the quality and cost requirements of customers.

Despite the lack of a generally accepted conceptual framework, there does appear to be some common features that appear in most writers' descriptions. Supply chain management is an integrating and co-ordinating concept, concerned with planning, sourcing, making and delivering goods and services from the initial supplier to the end customer. It is concerned with information as well as physical flows and seeks to add value and reduce costs.

Perhaps the explanation put forward by Michael Hurman, a supply chain consultant, is the nearest one can get to a workable, all-encompassing definition:

“Supply chain management *directs and coordinates* logistics activities across interdependent organisations that together make up a complete market channel for a range of products or services. Its *scope* encompasses the supplier's suppliers to the customer's customers. Its *purpose* is to facilitate flows of information, products/services and cash to maintain the business cycle of the organisation at optimum effectiveness. Its

challenge is to effectively manage a host of informal and contractual relationships across suppliers, providers and customers on whom the organisation is to fulfil its marketing promise.”

(Birchfield, 2002, p 52)

2.9.2 Different Levels

Supply chain management can operate at different levels. Chandra & Kumar (2000) talk about micro-level and macro-level issues, the former being concerned with the organisation and its immediate supplier or customer and the latter relating to wider supply chain aspects. Croom, Romano & Giannakis (1999) take this one stage further by analysing supply chain management in terms of dyadic, chain and network relationship levels. They found that certain exchange processes, such as those relating to physical assets, were well developed across all relationship levels, as they involve little transfer of intellectual property and the benefits in terms of cost reduction and quicker speeds are quite obvious. However, where exchange processes involve information and knowledge, integration is less developed at the network level.

Bauknight (2000) looks at supply chain management from the perspective of coordination and puts forward three levels of sophistication. At level one, *internal integration*, supply chain activities such as purchasing, manufacturing, distribution, spares management and customer services are coordinated within a single enterprise. At level two, *external collaboration*, operational and planning information is shared with strategic business partners to coordinate supply chain activities between the company and its direct suppliers and customers. Level three, *synchronisation*, extends the scope to the entire supply chain. The ultimate goal is to synchronise the activities of all supply chain participants, both within and outside the company, to the demands of the end consumer. However, According to Bauknight, no organisation has yet achieved a fully synchronised supply chain.

2.9.3 Universal Concept or Specific Sourcing Strategy?

Considering the evidence given above, supply chain management appears to be seen in two different ways. On the one hand it is referred to it as a generalised, all-encompassing

concept that organisations should strive for in the continuous search for excellence and best practice, rather like a supply-side version of total quality management. The problem with this approach is that supply chain management can be all things to all people and therefore lacks consistency and cannot be measured. Attempts have been made to overcome this problem by introducing different levels of supply chain management and varying degrees of sophistication, but the result is not conclusive.

The power regimes approach sees supply chain management as a specific sourcing strategy: one of four sourcing options open to an organisation. It entails working closely and collaboratively with partners throughout the whole supply chain in long-term arrangements and entails joint developments, adaptations and initiatives. Although supply chain management can provide substantial benefits, it requires considerable costs in terms of investment and commitment, therefore it is only worth adopting if the benefits outweigh the costs. Where this is not the case other sourcing strategies should be adopted. This interpretation of supply chain management enunciates a clear definition and recognises that different sourcing strategies will be required for different circumstances.

2.9.4 Multi Disciplinary Nature

Most writers emphasise the multi-disciplinary nature of supply chain management, drawing on aspects of marketing, economics, logistics and organisational behaviour. Chandra & Kumar (2000) put forward *Transaction Cost Analysis* as a justification for implementing the supply chain management concept. Supply chain management offers a third way between market mechanisms and vertical integration, thus achieving low transaction costs, a high level of control and the opportunity to concentrate on core competences whilst utilising the expertise of others.

The terms supply chain management and logistics are often used synonymously. However, Jarrell (1998) sees supply chain management as an evolutionary step beyond logistics and a study by Lummus, Krumwiede & Vokurka (2001) clearly differentiates between the two concepts. Logistics is concerned with the physical transportation of goods throughout the supply chain, whilst supply chain management deals with the overall management process. This finding is compatible with the categorisation put

forward by Day (1999) that was mentioned earlier: logistics is a *hard* approach, but supply chain management also deals with *soft* aspects. In this way, supply chain management can be seen as a total process concept whilst logistics is the implementation of that concept.

Min & Mentzer (2000) emphasise the role of marketing in supply chain management. It is essential that supply chains, not just individual firms, have a market orientation so that market information can be generated and shared, leading to a co-ordinated market response. Furthermore, relationship marketing is also important so that close inter-firm relationships can be developed, maintained and enhanced. Incorporating these marketing concepts into supply chain management ensures that the supply chain has a differential advantage over other, competing supply chains.

One example of how a supply chain management approach, incorporating both hard and soft aspects, and emphasising the multi-level and multi-disciplinary approaches, can be applied in practice is put forward by Taylor (1999). Taylor cites the problem of *demand amplification* (sometimes known as the *Forrester effect* or the *bull-whip effect*), whereby small variations in demand lead to increasing fluctuations upstream, which in turn leads to excesses or shortages in inventory, output and capacity.

Demand amplification is caused by decision-making taking place in functional silos with poor knowledge of downstream requirements and little understanding of how decisions affect upstream members of the supply chain. Taylor recommends identifying the key decision-makers in the supply chain, obtaining commitment, forming a demand management team, setting agreed schedules, sharing information, attacking root causes of variability, monitoring performance and reviewing progress. By adopting this supply chain management approach, problems of demand amplification can be overcome by a synchronised supply solution.

2.9.5 Adoption and Implementation

According to Lummus & Vokurka (1999), the growth of supply chain management has been slow and they put forward a number of reasons for this. These include a lack of guidelines for creating alliances, a failure to develop monitoring systems, a lack of vision

and top management commitment, an inability to integrate procedures, lack of trust, organisational resistance and the lack of integrated information systems linking firms. The latter aspect is of course being addressed very rapidly with the advent of e-commerce systems, but computer systems alone do not lead to successful supply chain management. Many of the other barriers are behavioural in nature and are therefore much more difficult to overcome.

Birchfield (2002) also cites prevailing accounting practices and performance success measures as limiting factors to the development of supply chain management principles. Benefits from improvements in the supply chain take time to filter through, but the costs are immediate, and quarterly reporting pressures can make investment in supply chain processes difficult to justify. More enlightened accounting methods, such as economic value added, which give a view on the sustainability of financial results, may improve this situation by putting a company's "real" performance into perspective.

Bauknight (2000) sees a significant constraint as being the shortage of other organisations to interact with, because few have developed the sophisticated collaborative capabilities required for successful supply chain management. Companies have a strong incentive to seek out those supply chain partners that are less advanced and assist them in developing collaborative capabilities, as supply chains that are not synchronised will be shut out of future business opportunities as the concept of supply chain management gains critical mass.

A strategic approach is needed if supply chain management is to be implemented successfully. Supply chain strategy needs to be linked to overall business strategy. Integrated demand driven systems need to be put into place, the supply base reduced and partnerships developed with suppliers and customers. Customised logistics networks should be set up as well as vertical information systems, which give total visibility and support the decision-making processes. Finally, cross-functional performance monitoring should be carried out by measuring a range of both service and financial key performance indicators.

Organisations must also ensure that their supply chain management strategies are aligned with their products and service offerings and their associated supply and demand

structures. The power regimes school put forward a generic framework (Cox et al, 2003) based on the work of Fisher (1997) that determines the appropriate type of supply chain for a particular product. This follows a three-stage construct of: (i) identify the demand profile of the product; (ii) understand the three generic types of supply chain management approaches that can be created; and (iii) link the product to the right supply chain type.

Functional products, which have predictable demand, require a *market cost leadership approach*, whereby supply chain management strategy focuses on the active removal of all unnecessary waste and inefficiency in processes, without major concern for product innovation. A physically efficient process is the primary concern and this can be seen as a lean approach requiring lean tools and techniques such as value stream mapping, supply chain response matrix, production variety funnel, quality filter mapping, demand amplification mapping, decision-point analysis and physical structure mapping.

Innovative products, which have unpredictable demand, require a *market differentiation approach*, whereby supply chain management strategy focuses on product innovation, without major concern for cost reduction or the removal of waste and inefficiencies. A market-responsive process is the primary concern and this lends itself to an agile approach. This can be achieved by uncertainty reduction (actual demand information rather than forecasts); uncertainty avoidance (process elimination, time compression of processes, integrating processes and operating processes congruently); and hedging against uncertainty (holding inventory, operating with excess capacity).

A third approach is possible, that of *market differentiation and cost leadership*, whereby supply chain management strategy focuses equally on product innovation and the removal of unnecessary waste and inefficiency in processes. This is a hybrid approach which appears to have similarities to the leagile paradigm.

Whichever approach is adopted, the aim is to create distinctive capabilities. However, these must be protected in order to appropriate their value. Even where a market differentiation approach is adopted, capabilities may be competed away in very competitive markets. Where a cost leadership approach is pursued, there is a high possibility of being unable to take advantage of distinctive capabilities. Value may have

to be passed on to the customer if they have dominant power in the supply chain or to the supplier where competences have been outsourced. It is for these reasons that the cost leadership approach does not normally produce above average returns. Companies that have outsourced need to look at the process efficiency of suppliers if the nature of the relationship allows this.

There are obviously similarities between the lean, agile and power perspectives in terms of supply chain management, as demonstrated in the above analysis. However, there are also some differences. The power regimes school posits that those organisations that can differentiate do not need to pursue process efficiency in order to generate rents, as extra physical costs may actually be incurred in pursuit of a differentiation strategy, such as over-stocking or excess capacity. The agile school, on the other hand, see leanness as a pre-requisite for agility.

There is clearly a trade-off in the market differentiation versus cost leadership debate, as more responsiveness is likely to result in diminished process efficiency. The agile school's solution to this dichotomy is put forward by Mason-Jones, Naylor & Towill (2000), who recommend engineering a lean process, then adapting it by removing specific constraints and capacity limitations. The power regimes school, however, is very sceptical that the two approaches can be adopted together in the same supply chain. Although the leagile concept appears to fulfil this dual role, Cox et al (2003) see this as a *customer-focused and cost leadership approach*, rather than a pure market differentiation and cost leadership strategy. The difference in the two approaches is that customer-focused organisations pass on savings to the customer, while differentiators retain the value for themselves.

Innovation is often seen as important in achieving sustainable competitive advantage, but care should be taken to avoid the blind pursuit of innovation for its own sake. An organisation needs to adopt *critical asset thinking* in order to develop advantage-generating resources either internally, through insourcing or by collaborating with supply chain partners. Furthermore, a distinction should be drawn between process innovations and product innovations. The former are difficult to protect, thus leading to the innovation treadmill of continuous improvement for little gain, as value is passed on to the customer. Product innovations, on the other hand, are easier to protect, enabling an

organisation to appropriate value and achieve above average returns. This again reiterates the limitations of the lean approach (pursuing process innovations).

The discussions regarding hybrid approaches and innovation epitomises what is perhaps the biggest difference between the power regime school and the other perspectives. Lean and agile approaches encompass systems thinking with little consideration of the power relationships, both internal and external, or distinctive capabilities. No matter which generic approach is adopted, sustainable competitive advantage will only be achieved if there are supportive internal and external power structures, which will enable distinctive capabilities to be developed and deployed to close off market opportunities to others.

There have been a number of doubts cast about the lean approach in terms of its usefulness to supply chain management and sustainable competitive advantage, but little has been said about the agile concept. In order to conduct such an evaluation, both the operational and strategic aspects of agility need to be considered.

Agility in its operational sense means “flexibility” or “the ability to respond” and is a component part of any supply chain management initiative, as a supply chain consists of a mix of lean and agile elements to suit the particular product type and marketplace arrangements. The agile elements are more likely to contribute to competitive advantage, since the lean factors are easy to copy. However, flexibility is also fairly transparent and has limited value as a distinctive capability. Operational agility, therefore, can be seen as leading to short-term gain, but has limited value in terms of sustainability.

In its strategic sense, agility means “re-configurability” or “the ability to change”. This has more promise as an advantage-generating resource as the ability to change is likely to be systemic and knowledge-based. However, supply chain management is concerned with the on-going direction and coordination of activities, flows and relationships, rather than re-configurability. Strategic agility, therefore, is not an important consideration in terms of supply chain management.

Strategic agility does have a useful role to play in terms of sourcing, however. The four types of sourcing option have already been mentioned and most organisations will need to incorporate a number if not all of these options in line with the variety of supply chains

encountered and their contingent circumstances. Furthermore, as situations change, they may need to swap one type of sourcing for another. This ability to re-configure their approach to sourcing could be seen as an advantage-generating resource.

2.10. Proactive Sourcing Strategies and Sustainable Competitive Advantage

2.10.1 Collaborative Relationships

Supplier development and supply chain management are proactive sourcing strategies inasmuch as they are based on collaborative relationships with suppliers. Collaborative relationships consist of integration and adaptation between the two parties, which can be summarised according to four different headings suggested by Cannon & Pereault (1999).

First, *product and process information exchange*, which includes the sharing of proprietary information, cost information, forecasting information and the mutual involvement in product development meetings. Examples of such exchanges are open-book costing arrangements, joint demand forecasting, and value-stream mapping for waste reduction. Second, *operational linkages* refer to systems, procedures and routines of the buyer and supplier which are linked to facilitate the flow of goods, services or information. These are often known as ‘technical bonds’ and can operate across many exchange partners. E-procurement linkages and just-in-time arrangements are typical examples.

Cooperative norms are the third form of integration and adaptation. It is important for the two parties to work out an agreed set of expectations about how each of the two parties should behave in the relationship and how they should deal with any problems. Trust-building events and after-sales value-adding activities can fulfil this role. Finally, there are *relationship-specific adaptations*. These are adaptations to process, products or procedures that are non-transferable to relationships with other suppliers. These

investments can be made by one or both parties and will affect the ability of the parties to exit the relationship. Examples include joint projects, joint investments and joint venture initiatives.

Due to the integration and adaptation that takes place between the supply chain partners, collaborative relationships comprise systemic, knowledge-based, socially complex capabilities which are difficult to identify and to duplicate, and which are also enhanced by use, thus achieving high levels of causal ambiguity and path dependency. This enables *relational rents* to be achieved (Barney, 1991; Chen, Paulraj & Lado, 2004; Das & Teng, 2000; Dyer & Singh, 1998; Eisenhardt & Schoonhoven, 1996; Kale et al, 2000; Mol, 2001). Sourcing strategies based on collaborative relationships therefore have the potential to achieve sustainable competitive advantage.

Referring to Peteraf's (1993) resource-based model of sustainable competitive advantage, which was discussed in Chapter Two, it can be argued that proactive sourcing strategies have more of a potential to achieve all four cornerstones than most reactive approaches. Short-term competitive advantage can be achieved through *resource heterogeneity* (different buyer/supplier relationships will have varying capabilities) and *ex ante limits to competition* (first mover advantage), while long-term sustainability can be attained by means of *ex post limits to competition* (because the sourcing activities are embedded in the relationship and cannot be easily substituted or copied) and *imperfect mobility* (because the sourcing activities are relationship-specific).

Due to its advantage-generating potential, some advocates of proactive sourcing insist that only this type of strategy should be adopted, but this assertion should be treated with care. There is no doubt that proactive sourcing strategies can have considerable benefits in terms of improved functionality, innovation and control, but they incur considerable sunk and switching costs and may lead to supplier opportunism or complacency. Proactive sourcing should only be adopted where the benefits outweigh the costs, after taking into account the risks involved. The selection of sourcing strategies is discussed further in Section 2.10.3.

The ability of an organization to appropriate the advantage-generating potential of proactive sourcing should also be considered. Referring to Collis & Montgomery's

(1995) five tests of sustainability, it can be argued that proactive sourcing strategies may be *inimitable*, they may be *durable*, and they are less easily *substitutable*.

Appropriability, however, is not as straightforward. If the buying organisation is to appropriate the value from the sourcing strategy, then it must be in a favourable power position vis a vis its suppliers. This is the only way of ensuring that proactive sourcing strategies have long-term *competitive superiority* for the buying organisation. The retail supermarket industry serves to illustrate this point.

There is considerable evidence to suggest that UK supermarkets adopt proactive sourcing. Hingley (2005) confirms that they utilise collaborative relationship-based constructs; Wagner, Ellis & Johansson (2005) find that they undertake supplier development; Aviv (2001) acknowledges the widespread use of collaborative planning, forecasting and replenishment systems; and Rogers, Ghauri & George (2005) find that Tesco partners suppliers, shares information, partakes in supplier development, and works closely with them at a micro-level. Collins & Burt (2003) state that the evolution of the supermarket as a brand has had substantial implications for supplier relationships. A retailer's brand image is significantly determined by suppliers' activities in producing own-label products, leading to retailers increasing their involvement with, input to and control of suppliers.

While there is evidence to suggest that retail supermarkets adopt proactive sourcing, the buyer/supplier relationships are not equitable (Hingley, 2005). This is because supermarkets in the UK are large powerful players in a consolidated industry, controlling scarce access to shelf-space and routes to market. This enables them to achieve, not just low prices from their suppliers, but also to extract other financial benefits, all of which serve to take profits away from suppliers (Dobson, 2005). The Competition Commission (2000), Blythman (2004), and Towill (2005) cite a number of examples of supermarkets pressuring suppliers and engaging in sharp practices.

The behaviour exhibited by supermarkets in the UK displays typical characteristics of adversarial collaborative relationships. Supermarkets collaborate with suppliers at an operational level to add value, but compete with them commercially in order to appropriate as much of this value for themselves. This ensures that the supermarkets convert the advantage-generating potential of the sourcing strategy into sustainable

competitive advantage at the expense of the suppliers. The supermarkets can do this because they are in a position of buyer dominance over the suppliers.

Most discussions of supermarkets' sourcing strategies in the literature relate to own-label products and the discussion above refers to these spend categories. One would expect the situation for branded products to be different (Fearne, Duffy & Hornibrook, 2005). In these situations, the suppliers have power resources of their own which enables them to appropriate an equitable portion of the value produced by the proactive sourcing activity. Supermarkets are able to provide access to shelf-space, but branded-goods manufacturers supply products that consumers expect to find on those shelves. Both organisations need each other and supermarkets therefore have to adopt a non-adversarial collaborative approach, which entails close operational working and the equitable sharing of value at the commercial level. The supermarkets are still able to convert the advantage-generating potential of the sourcing strategy into sustainable competitive advantage, but in this case the suppliers are also able to do so. The issue of appropriability is further discussed in the following section.

2.10.2 Appropriating Sustainable Competitive Advantage

Proactive sourcing strategies have advantage-generating potential. However, research by the CBSP has shown that they are only likely to be successful in situations where buyer dominant or interdependent power relationships exist, thus enabling the value of the sourcing strategy to be appropriated by the buying organisation either wholly (buyer dominance) or partially (interdependence).

If proactive sourcing strategies are to lead to sustainable competitive advantage, appropriate internal and external power structures need to be in place in order to ensure buy-in from other functions and suppliers, effective resources with the right skills and capabilities must be available, and competent and congruent suppliers selected. If these enablers are in place, then there is no doubt that proactive sourcing strategies can be highly effective. The amount of effort involved in developing, managing and integrating suppliers is considerable and will involve building up distinctive capabilities over time, thus making the strategies unique, opaque and difficult to replicate.

In conclusion, proactive sourcing strategies, such as supply chain management and supplier development, are based on collaboration and integration with suppliers and the ensuing relationships are complex and difficult for competitors to imitate, which enables *relational rents* to be achieved. These potential gains are why there is such interest in proactive sourcing approaches, but there are risks involved. It may not be possible to appropriate the value of the relationship if the buying organisation is not in an advantageous position and may find itself *locked in* to suppliers and open to opportunistic behaviour or complacency. With these pitfalls in mind, great care should be taken when deciding whether to adopt proactive sourcing. The process by which an appropriate sourcing strategy can be selected is discussed in the next section.

2.10.3 Selecting Appropriate Sourcing Strategies

In order to decide whether proactive sourcing is appropriate, the power regimes school suggest a two-stage process (Cox et al, 2003). First, categories of spend should be evaluated in order to calculate and allocate investment costs, the likely return and the risks involved. This first-stage will determine whether proactive sourcing is commercially profitable, whereas the next level of analysis establishes whether the approach is operationally feasible.

The second stage evaluates whether proactive sourcing can be implemented. Managerial competence and understanding need to exist in terms of *operational competence* (in the tools and techniques to support the option) and *demand management competence* (to make the business attractive to suppliers), both internally (within the organisation) and externally (at the supply chain level). Furthermore, there needs to be an appropriate alignment of power and incentives. This again has an internal dimension (intra-organisational power) and an external dimension (inter-organisational power).

In terms of intra-organisational power, it needs to be determined whether other functions can be persuaded to support proactive sourcing. This will depend on the level of *uncertainty* (in terms of sourcing needs and the means to achieve them), the *centrality* of the other function (the importance and closeness to the sourcing process) and the possibility of *substitutability* (the ease with which the activities performed by the function can be performed by other actors, either internally or externally). In situations

where other functions understand proactive sourcing and want to help (*confirmed allies*) or where they are supportive but lack knowledge of the principles involved (*potential allies*), the sourcing option is likely to have the necessary level of internal support that is required to make it operationally feasible. This consideration of the potential organisational roadblocks is compatible with the organisational context thinking which is essential in applying resource-based approaches.

Regarding inter-organisational power, it needs to be established whether suppliers can be persuaded to invest in proactive sourcing. This will depend on four important attributes: *scarcity* (the number of alternative suppliers or customers with which to do business), *utility* (the importance of the supplier or customer in the context of an organisation's overall business objectives), *switching costs* (the ease with which a supplier or customer can find and change to an alternative source of revenue or supply), and *information asymmetry* (the degree of private knowledge that the supplier or customer holds regarding supply or demand characteristics). In the case of supply chain management, this analysis should be undertaken, not just at the dyadic level but across the whole supply chain, as appropriate power structures must exist between all supply chain players for the concept to be implemented effectively.

In situations where there are high levels of scarcity, utility, switching costs and information asymmetry on the part of both the supplier and the customer (*interdependence*), external support for proactive sourcing is likely to be forthcoming, as mutual incentives exist. In cases where there is *buyer dominance* (the customer displays high levels of the attributes, but the seller does not), then proactive sourcing can still work, as suppliers can be coerced into compliance. Either of these situations helps to ensure that proactive sourcing is operationally feasible.

In summary, for proactive sourcing to succeed, the buyer must have the internal capabilities to “stretch” the design and specification requirements across the supply base and the internal resources to embark on the complex and time-consuming role of developing suppliers. It is therefore essential that internal support is in place. Organisational players need to understand what proactive sourcing is and want to help with its implementation. There must also be in existence an external power structure that

is conducive to buyer-led supply chain improvement, such as interdependence or buyer dominance situations.

Even if internal and external support is in place, proactive sourcing may still not work. The wrong skills and capabilities may be outsourced, leading to suppliers becoming dominant (post-contractual supplier lock-in). Organisations must therefore be clear as to what constitutes core and non-core activities and ensure that advantage-generating resources are not outsourced, but are protected and developed.

2.10.4 Conclusion

The power regimes approach is based on the resource-based view, but also considers the market-based perspective and the organisational context. It therefore appears to be a useful approach to understanding how different sourcing strategies can lead to sustainable competitive advantage. The power regimes school puts forward four sourcing strategies that an organisation can adopt, dependent on contingent circumstances. The two reactive sourcing strategies, supplier selection and supply chain sourcing, do not appear to have long-term advantage-generating potential since they are simple, open, transparent, and based on arms-length relationships with suppliers, making them easy to replicate. However, the two proactive sourcing strategies, supplier development and supply chain management, appear to have long-term advantage-generating potential, as they are based on collaborative relationships with suppliers which are systemic and knowledge-based and thus difficult for competitors to replicate.

Although the literature review has indicated that proactive sourcing strategies may lead to sustainable competitive advantage more than reactive approaches, the view that proactive is good and reactive is bad should be avoided. Some advocates of proactive sourcing often insist that only this type of strategy should be adopted, but this is not necessarily the case. There is no doubt that proactive sourcing strategies can have considerable benefits in terms of improved functionality, innovation and control, but reactive approaches should not be dismissed. Proactive sourcing strategies incur considerable sunk and switching costs and may lead to supplier opportunism or complacency. Reactive sourcing, on the other hand, is a low-cost, low-risk approach, and may therefore be preferable in many circumstances.

FIGURE 2.5 NOT SCANNED ON
INSTRUCTION FROM THE UNIVERSITY

Furthermore, companies that adopt reactive sourcing strategies can still achieve sustainable competitive advantage. However, it is likely that the success of the organization is not due to the sourcing strategy itself, but can be attributed to some other isolating mechanism, such as a monopoly position, property rights, size of business, economies of scale, reputation effects, technical or commercial knowledge, and so on. Large company size, and hence leverage, appears to be a particular attribute.

In terms of proactive sourcing, a number of internal and external facilitators need to be in place for it to achieve its potential. The relative power relationship between supply chain partners appears to be an important consideration and this has been well-researched and extensively documented by the power regimes school (see Cox, Sanderson & Watson, 2000; Cox et al, 2002; Cox et al, 2003). Figure 2.5 summarises the attributes that dictate the type of power relationship that exists between a buyer and a supplier.

FIGURE 2.5: The Attributes of Buyer and Supplier Power

Source: Cox et al (2003)

It can be seen that the attributes are based on the principles of utility, scarcity, switching costs and information asymmetry of the dyadic relationship. Only in situations where a buyer's power attributes are greater than or equal to that of the supplier (buyer dominance or interdependence respectively) will proactive sourcing be successful. This is because these are the only conditions where the buyer can appropriate the value from the sourcing strategy, either wholly (buyer dominance) or partially (interdependence). The other two

power positions, buyer dependence and independence are not conducive to adopting proactive sourcing. In conditions of buyer dependence, the supplier will appropriate the value of the sourcing strategy and there is no incentive for the two parties to work together where independence exists.

2.11. Towards a Model of Sourcing Strategy and Sustainable Competitive Advantage

Based on the findings of the literature review, it is now possible to devise a model of the determinants that influence whether a sourcing strategy achieves sustainable competitive advantage. The model is shown in Figure 2.6.

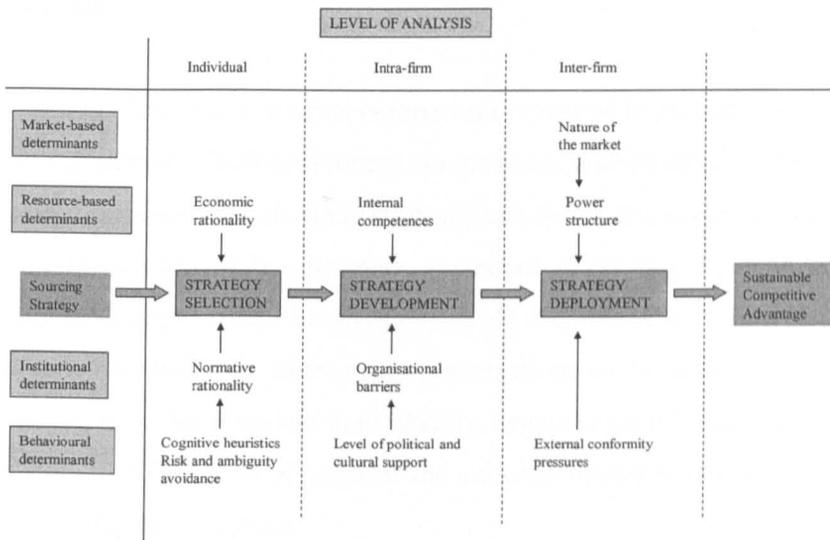


FIGURE 2.6: The Determinants that Influence Whether a Sourcing Strategy Achieves Sustainable Competitive Advantage

Two fundamental principles apply to this model. First, there are four generic sourcing options available to an organisation. Second, achieving sustainable competitive advantage through sourcing is dependent on developing an approach that has distinctive capabilities and identifying the circumstances in which it can be deployed and protected successfully.

It is argued that the ability of an organisation to select, develop and deploy an advantage-generating sourcing strategy and whether this in turn leads to sustainable competitive advantage is constrained by the market and the social environment in which it operates. There are a number of determinants that constrain and impinge on this process and these are categorised under the headings of market-based, resource-based, institutional and behavioural determinants. Analysis of the determinants can take place at three different levels: the individual, intra-firm and inter-firm levels.

At the individual level, managers need to make decisions regarding which sourcing strategy to adopt based on economic rationality, driven by motives of efficiency, effectiveness and profitability. However, all too often decisions are made according to normative rationality (driven by historical precedent and social justification) and cognitive heuristics (short-cuts and rules of thumb) allied to risk and ambiguity avoidance.

At the intra-firm level, internal competences must be in place to support the chosen sourcing strategy. Both operational competence (understanding the tools and techniques required to support the sourcing strategy) and demand management competence (to make the business attractive to customers) are essential. Developing an advantage-generating sourcing strategy usually involves intangible and tacit resources, with uncertain outcomes and long time horizons. Since many organisations are biased towards tangible assets, certainty, short-termism and individuality, organisational barriers may impede their development. The level of political and cultural support available is a key element in overcoming these barriers.

At the inter-firm level, the deployment of a particular sourcing strategy is dependent on the nature of the market in terms of the relative strengths of participants, the level of customisation required and the demand profile of products. These factors will determine the power structure between supply chain partners.

Finally, there may be external conformity pressures from professional, trade and governmental bodies for organisations to adopt certain sourcing strategies. For example, supply chain management is currently seen as a panacea and many of these external agents are putting pressure on companies and industries to adopt the concept, which may

not be compatible with their particular markets and operations. Similarly, in the public sector, EU directives have encouraged buyers to adopt supplier selection strategies in order to increase transparency and accountability.

In conclusion, sourcing strategies need to exhibit distinctive capabilities in order to be capable of achieving sustainable competitive advantage. Furthermore, there are a number of internal and external factors that enable a sourcing strategy with distinctive capabilities to be deployed successfully. The inter-firm power structure appears to be a major consideration and is therefore used as the moderating variable for this thesis. The development of the research questions is discussed in the next section.

2.12. Development of the Research Questions

The relationship between sourcing strategies and sustainable competitive advantage is embodied in Figure 2.7.

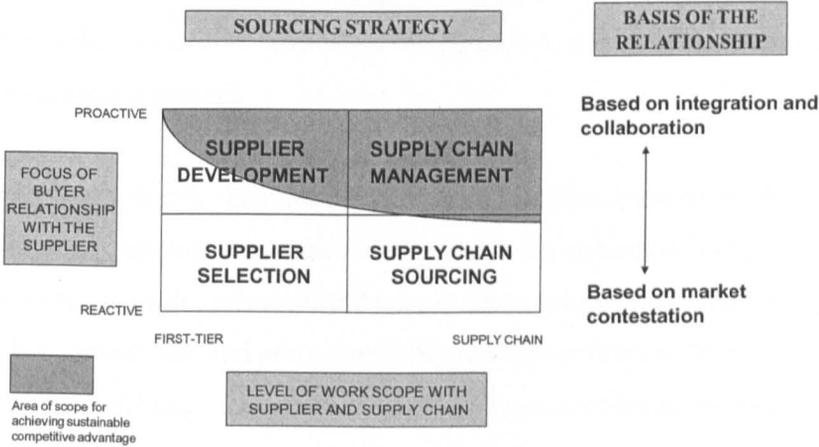


FIGURE 2.7: The Relationship Between Sourcing Strategy and Sustainable Competitive Advantage

There are four generic sourcing options available to an organisation: supplier selection, supply chain sourcing, supplier development and supply chain management. The aim of this research is to identify which of these approaches, if any, can lead to sustainable

competitive advantage in order to determine whether sourcing policy can make a difference to an enterprise's strategic performance.

Sustainable competitive advantage is achieved by developing advantage-generating resources. It is argued that supply chain management can be advantage-generating, as it normally encompasses knowledge-based systems and complex bundles of tacit capabilities, thereby making it heterogeneous, opaque and difficult to identify and copy. It is these characteristics that enable supply chain management to achieve sustainable competitive advantage, rather than the concept per se. It therefore follows that, if other sourcing options are also to achieve sustainable competitive advantage, then they too must comprise these distinctive capabilities.

Supplier development is a similar sourcing strategy to supply chain management, as it is a proactive approach based on integration and collaboration, albeit at a dyadic rather than network level. The proactive nature of supplier development may facilitate the development of advantage-generating resources, but the dyadic emphasis may limit their deployment. It can therefore be argued that supplier development may also achieve sustainable competitive advantage, but perhaps to a lesser degree than the supply chain management approach.

Whereas supplier development and supply chain management would appear to be strategically advantageous, the final two sourcing options do not seem to be so promising. Supplier selection and supply chain sourcing are reactive approaches based on market contestation and arms-length buyer/supplier relationships. The opportunity to develop advantage-generating resources in these circumstances appears to be limited. Although the latter approach involves the buyer looking beyond the first-tier supplier in order to identify leverage opportunities, thus expanding the opportunities to develop distinctive capabilities, it may be difficult to achieve heterogeneity, opacity and inimitability in these market-contested environments.

The power relationship between the buyer and supplier may be an important consideration. The literature review indicates that proactive sourcing strategies will only be successful in situations of buyer dominance or interdependence. This is because a

beneficial power position enables the buying organisation to appropriate the value of the sourcing strategy. In situations of buyer dominance, the buyer can appropriate the majority of the value, but where interdependence exists, the value has to be shared.

2.13. The Research Questions

The literature review indicates that there are four generic sourcing strategies that organisations can adopt. Implemented in appropriate circumstances, proactive sourcing strategies such as supply chain management and supplier development can lead to high levels of sustainable competitive advantage, since they are based on integration and collaboration with suppliers. However, reactive sourcing strategies, which are based on market contestation and arms-length supplier relationships, are less likely to be strategically important.

The existing power relationship may also have an effect on sustainable competitive advantage. Proactive sourcing strategies may only be successful where buyer dominant or interdependent power relationships exist.

In order to test the theory discussed in this thesis, two research questions are derived:

1. Proactive sourcing strategies lead to sustainable competitive advantage, but reactive approaches do not.
2. Proactive sourcing strategies only achieve sustainable competitive advantage if buyer dominant or interdependent power relationships exist.

In order to test the research questions empirically, a triangulation approach is adopted, comprising of surveys, questionnaires and interviews. The detailed methodology is discussed in Chapter Three.

Chapter Three

Methodology

3.1. Chapter Introduction

Chapter Two concluded with the research question that proactive sourcing strategies, such as supply chain management and supplier development, are more likely to achieve sustainable competitive advantage than reactive approaches (supplier selection and supply chain sourcing). A second research question states that proactive sourcing strategies can only be successful in situations where interdependent or buyer dominant power relationships exist.

The aim of Chapter Three is to discuss, clarify and justify the research philosophy, design, process and methods used in order to test the research questions. Section 3.2 discusses the overarching research philosophy. This is followed by a discussion of the general research design issues in Section 3.3. More specifically, what constitutes a fair test of the research questions is covered in Section 3.4, and the steps taken to ensure validity of the research findings (including sampling choice) in Section 3.5. The research process consisted of an initial research stage, a main research stage, and a deduction stage. The practical activities and concerns at each of these stages are discussed in Section 3.6. Finally, there is a chapter conclusion in Section 3.7.

3.2. The Research Philosophy

The research philosophy is the fundamental way of thinking about the development of knowledge and the nature of reality. Before conducting any research it is important to

consider the overarching research philosophy that is to be adopted, as this determines the research approaches and strategies that follow. Easterby-Smith et al (2008) identify three reasons why the exploration of research philosophy is important:

- It can help the researcher to refine and specify the research strategy and methods to be used in a study. This would include the type of evidence gathered and its origin, the way in which such evidence is interpreted, and how it helps to answer the research questions posed.
- Knowledge of research philosophy will enable and assist the researcher to evaluate different methodologies and methods and avoid inappropriate use and unnecessary work by identifying the limitations of particular approaches at an early stage.
- It may help the researcher to be creative and innovative in either selection or adaptation of methods that were previously outside his or her experience.

According to Clarke (1998), the choice of approach is dependent on the context of the study and the nature of the questions being asked. The researcher's experience, understanding of philosophy, and personal beliefs may also have some bearing on the method adopted (Denzin & Lincoln 1994). Shih (1998) expands this idea and lists four areas for consideration when deciding on a research method: the philosophical paradigm and goal of the research, the nature of the phenomenon of interest, the level and nature of the research questions, and practical considerations related to the research environment and the efficient use of resources. Proctor (1998) considers that consistency between the aim of a research study, the research questions, the chosen methods, and the personal philosophy of the researcher is the essential underpinning and rationale for any research project.

In establishing the research philosophy, epistemological considerations (what is regarded as acceptable knowledge) and ontological considerations (the nature of reality) are very important. Two competing philosophies are generally put forward: positivism and interpretivism (sometimes known as the phenomenologist approach). An overview of the two philosophies is shown in Table 3.1.

| | POSITIVIST PARADIGM | INTERPRETIVIST PARADIGM |
|---------------------------|---|---|
| BASIC BELIEFS | <ul style="list-style-type: none"> • The world is external and objective • Observer is independent • Science is value free | <ul style="list-style-type: none"> • The world is socially constructed and subjective • Observer is part of what is being observed • Science is driven by human interests |
| RESEARCHER ACTIONS | <ul style="list-style-type: none"> • Focus on facts • Look for causality and fundamental laws • Reduce phenomena to simplest elements • Formulate hypotheses and then test them | <ul style="list-style-type: none"> • Focus on meanings • Try to understand what is happening • Look at the totality of each situation • Develop ideas through induction from data |
| PREFERRED METHODS | <ul style="list-style-type: none"> • Operationalising concepts so that they can be measured • Taking large samples | <ul style="list-style-type: none"> • Using multiple methods to establish different views of phenomena • Small samples investigated in depth over time |

TABLE 3.1: Key Features of Positivist and Interpretivist Paradigms

Source: Easterby-Smith et al (2008)

According to Srivastava & Teo (2006), the *positivist paradigm* has its roots in the natural sciences and aims to give absolute properties of observable truth or untruth to all phenomena that are observed. It propounds the existence of universal laws that can be validated through experimental means and explains the phenomena in terms of cause and effect relationships. The positivist paradigm looks for statistical generalisability, validity, reliability and repeatability. The positivist paradigm utilises variance theory. A model is constructed based on the literature to define a cause and effect relationship. It explains the phenomenon through a hypothesised relationship which is validated usually by means of quantitative survey data.

According to Srivastava & Teo (2006), the *interpretivist paradigm* has its roots in the social sciences. It tries to understand the phenomenon in a holistic way, resting on the assumption that nothing in the world is real in an absolute sense. It does not confer absolute explanatory power to the variables affecting a phenomenon, but tries to understand the process and delve deeper to offer second-order explanations for the process. The interpretivist paradigm utilises process theory. It does not seek to identify dependent and independent variables, but attempts to understand the process in a holistic way. It traces the events, activities and choices made in a time frame. It also explains the various inter-linkages and how particular choices may trigger certain activities and lead to certain events.

The descriptions given above are rather extreme views. It is generally accepted that positivism and interpretivism are not mutually exclusive and that most social research will include elements of both (Bryman & Bell, 2011; Clarke, 1998; Webb, 1989). Positivism and interpretivism can be seen as being at opposite ends of a continuum, but most social science research will be positioned somewhere in-between. This is certainly true for this research project, as discussed below.

Business and management is of course a social science rather than a natural science. It could therefore be argued that the interpretivist paradigm should prevail. Not only are business situations complex, but they are unique, being a function of a particular set of circumstances and individuals. Research based on the interpretivist paradigm is indeed increasing (Vessey, Ramesh & Glass, 2002), but there are problems with adopting this philosophy. Srivastava & Teo (2006) point out that, although there are established and accepted norms and procedures for understanding, conducting and assessing positivist research which have been institutionalised over time, there are very few similar institutionalised procedures for interpretivist research.

Due to the established and accepted procedures that are available, the thinking behind this research project is predominantly based on the positivist paradigm. A model and research questions are constructed based on the literature, which are then tested across a range of different situations in order to assess their generalisability. The research studies that have been conducted in the procurement field in terms of competitive advantage (Thrulogachantar, 2010; Van Weele, 2010; Lawson et al, 2009; Benito, 2006; Tracey, Lim & Vonderembse, 2005; Mol, 2003; Carr & Pearson, 1999; Kapoor & Gupta, 1997; Carter & Narasimhan, 1996; Tully, 1995; Ellram & Carr, 1994; Spekman, Kamauff & Salmond,) all adopt such an approach, and it is therefore seen as accepted practice.

Although this research project is predominantly based on the positivist paradigm, it was recognised that proving cause and effect in business and management research is very difficult, since there are a number of intervening variables that may affect the outcome. With this in mind, certain elements of the interpretivist paradigm were introduced into the investigation. The commercial and organisational context of the sourcing strategies and the resource-based, institutional and behavioural determinants that affect their selection, development and deployment were analysed qualitatively in order to

3.3. The Research Design

Once the research philosophy has been established, there are a number of strategic issues that need to be addressed regarding research design. These issues can be seen as a series of decision-making layers that must be considered in sequence in order to ensure that an appropriate research design is conceived in line with the research question to be answered and the type of research that is to be carried out. The layers are: (i) the purpose and context of the research; (ii) the research approach; (iii) the research strategy; (iv) the research orientation; and (v) the time horizon. Figure 3.2 gives a flow chart of the research design process encompassing the five layers and a detailed discussion follows of the available choices and the decisions made at each stage.

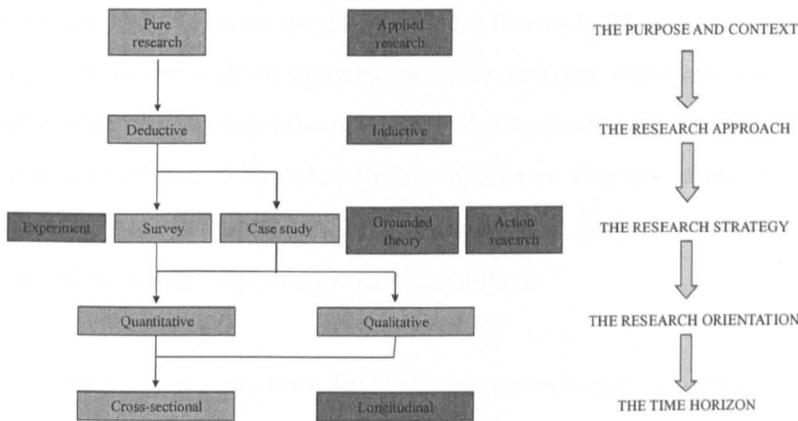


FIGURE 3.2: Research Design Flow Chart

Adapted from: Saunders, Lewis & Thornhill (2000)

3.3.1 Purpose and Context

In terms of the purpose and context of the research, there are two main classifications for business and management investigations: pure (sometimes known as basic, fundamental or academic) research and applied research. These are discussed below in accordance with the definitions provided by Saunders, Lewis & Thornhill (2009).

The purpose of *pure research* is to expand the general body of knowledge relating to business and management processes. It results in universal principles relating to the

process and its relationship to outcomes, with the findings being of significance and value to society in general. The context of pure research is that it is undertaken by people based in universities, and the choice of topic and the objectives are determined by the researcher.

The purpose of *applied research* is to improve understanding of a particular business or management problem, and it results in a solution to the problem. The new knowledge is limited to the problem and the findings are of practical relevance and value only to managers in the organisation. The context of applied research is that it is undertaken by people in a variety of organisations and the objectives are negotiated between the researcher and the subject.

The main aim of this investigation is pure research, since it is being conducted in order to contribute to the body of knowledge about sourcing strategies and their relationship to sustainable competitive advantage. It is not limited to specific organisational problems and is not influenced by the subjects' objectives. The aim of the research is to determine a universal set of principles relating to if and when generic sourcing strategies lead to the outcome of sustainable competitive advantage.

It could be argued, however, that there is some element of applied research to the investigation. Although the researcher does not put forward recommendations to solve specific organizational problems, it is envisaged that the findings can be used by practitioners to help them devise more effective sourcing strategies. Easterby-Smith et al (2008) confirm that it is unlikely that any business and management research is conducted without some consideration being made of the practical consequences. Pure and applied research should therefore be seen as the two ends of a continuum rather than discrete choices. This investigation is positioned somewhat towards the *pure* end of the scale but incorporates some elements of *applied* research.

3.3.2 The Research Approach

A research project involves the use of theory, which may or may not be made explicit at the design stage. The extent to which the theory is clear at the beginning of the research raises an important question concerning the design of the research project. This is

whether the researcher should adopt a deductive approach, where a theory and hypothesis are developed and then tested, or an inductive approach, where data are collected and a theory developed as a result of the data analysis. The two approaches, as defined by Saunders, Lewis & Thornhill (2009), are discussed below.

The *deductive approach* (testing theory) is based on scientific principles, moving from theory to data, and emphasises the need to explain the relationships between variables. It is a highly structured approach with a strong need to select samples of sufficient size in order to generalise conclusions. The researcher must be independent of what is being observed.

The *inductive approach* (building theory) seeks to gain an understanding of the meanings humans attach to events allied with a close understanding of the research context. It has a more flexible structure to permit changes of research emphasis as the research progresses. Theory follows data and there is less concern with the need to generalise. The researcher is usually part of the research process.

Cox (1997) criticizes the inductive approach as descriptive and empiricist, in which concepts are driven by observation and anecdotal evidence rather than by theory. The deductive approach, on the other hand, is prescriptive and abstractive, whereby a prior, idealized theory is empirically tested for validity. Deduction is a more robust and superior approach to research, as it is driven by theory rather than observation, but it may not always be feasible or desirable. Gray (2009) suggests a number of practical criteria to determine which approach should be adopted: (i) the nature of the research; (ii) the time available; (iii) the risk factor; and (iv) the preferences of the audience.

The nature of the research is perhaps the most important criteria. Where a wealth of literature is available from which a theoretical framework and research questions can be developed, the research lends itself to the deductive approach. With research into a topic that is new and on which there is little existing literature, it may be more appropriate to generate data and reflect on the theoretical themes that the data are suggesting in an inductive way.

The time available is also an issue. Deductive research can be quicker to complete. Data collection is often based on "one-take" and it is normally possible to accurately predict the timescales. On the other hand, inductive research can be much more protracted. Often the ideas, based on a much longer period of data collection and analysis, have to emerge gradually. This leads to another important consideration: the extent to which the researcher is prepared to indulge in risk. Although deduction has some risks, such as the danger of hypothesising without evidence, it is essentially a low-risk approach. With induction, there is always the fear that no useful data patterns and theory will emerge. Finally, there is the question of audience. An approach that is aligned with the preferences of the participants is more likely to lead to buy-in and acceptance.

Based on the assessment of the two approaches and the criteria that determines which to adopt, a deductive approach to this research project was chosen for the following reasons. Deduction is a more robust, superior approach, as it is driven by theory rather than observation. A wealth of literature was available in relation to competitive advantage, the resource-based view, and different sourcing strategies. Objectivity and generalisability were major concerns, as the research aimed to test the validity of research questions across a range of different situations. Furthermore, there were strict constraints on the timescales of the research, which required a "one-take", low-risk approach. In terms of audience preferences, Easterby-Smith et al (2008) state that most managers are familiar with deduction and more likely to put faith in the conclusions emanating from this approach.

The deductive approach is highly structured. Adapted from Robson (1993), there are five sequential stages through which deductive research will progress: (i) deducing a research question from the theory; (ii) expressing the research question in operational terms which proposes a relationship between specific variables; (iii) testing the research question through empirical inquiry; (iv) examining the specific outcome of the inquiry; and (v) if necessary, modifying the theory in light of the findings. These were the steps taken during this research project.

3.3.3 The Research Strategy

The research strategy is a general plan of how the research question is to be answered. It is important to differentiate between research strategies and tactics. The former is concerned with the overall approach that is adopted and is covered in this section, whereas the latter is about the finer detail of data collection and analysis that is covered in Section 3.6. There are a number of generic research strategies that appear in the literature, but the six put forward by Saunders, Lewis & Thornhill (2009) appear to be the most common. The six strategies are: (i) the experiment; (ii) the survey; (iii) the case study; (iv) grounded theory; (v) ethnography; and (vi) action research. A detailed discussion of each of them follows.

The experiment is a classical form of research that owes much to the natural sciences. Studies take place within a designed, controlled environment and usually involve special treatments of different groups to contrast the precise relationship among variables. Although it features strongly in some areas of social science research, such as psychology, the experiment is not appropriate for most business and management situations, as it requires a controlled environment and the manipulation of variables by the researcher. This was not possible for this investigation and the experiment was not therefore used as a research strategy.

The survey gathers data usually by means of a questionnaire and is a popular and common strategy in business and management research. It allows the collection of large amounts of data from a sizeable population in a highly economical way. These data are standardised, thus facilitating easy comparison. The survey is easily understood, is seen as authoritative, and allows a great deal of control over the research process. It is therefore used within this research in two ways: (i) as a means of identifying and selecting cases for the main research stage; and (ii) as a means of answering the research question itself. These are discussed in more detail in Section 3.6.

Despite the survey's advantages, it needs to be treated with caution. There is a limit to the number of questions a questionnaire can contain in order to facilitate completion and there is always the possibility of questions being misinterpreted and the results therefore being invalid. Surveys work best with standardised questions which give confidence that

they will be interpreted in the same way by all respondents (Robson, 1993). A lot of time and effort was therefore spent in designing the survey questions, as discussed in Section 3.6.

The case study is the development of detailed, intensive knowledge about a single case or small number of related cases. This strategy is of particular interest if the aim of the research is to gain a rich understanding of the context of the research and the process being enacted. The case study has considerable ability to generate answers to the question "why?" as well as the "what?" and "how?" questions which can be elicited from a survey. The two strategies, case study and survey, can therefore be seen as complimentary to each other. The data collection methods within a case study strategy may be various, such as questionnaires, interviews, observation, and documentary evidence.

Yin (2009) describes the case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context" and that they are especially useful "when the boundaries between phenomenon and context are not clearly evident". This makes case studies particularly appropriate for this research project, since the aim of the research is to carry out a detailed analysis of the sourcing strategies adopted by organisations, the existing power relationships between buyers and sellers, the internal and external influences and the affect that combining these variables has on achieving sustainable competitive advantage. Case study analysis is the best way to gather this detailed information. Whereas surveys are used to collect data on a limited range of topics from a large, diverse and widely distributed population, case studies can explore many themes and subjects, but from a more focused range of people, organizations or contexts.

Case studies are often criticised for their inability to draw generalisable conclusions about events and causal relationships which occur within a particular set of circumstances (Gray, 2009). However, this criticism refers to a descriptive, empiricist approach based on induction and is indeed flawed as a research methodology, since concepts are driven by observation and anecdotal evidence rather than by theory. The use of case studies in this research project is based on a prescriptive, abstractive approach, whereby a prior, idealized theory based on deduction is empirically tested for validity.

When properly designed and constructed, case studies have proved to be a powerful research strategy for business applications (Stuart et al, 2002; Ellram, 1996; Lee, 1989; Bonoma, 1985). However, Wagner & Schwab (2004) warn that the results from a single or even a small number of case studies tend to be very specific and can create problems with generalisability. Multiple case studies results are more generalisable, since they allow for an examination of patterns across varying situations. This identification and analysis of patterns across a larger number of case studies is referred to as the *case survey method* (Larsson, 1993; Yin & Heald, 1975; Lucas, 1974), *collective case studies* (Yin, 2009), or *multi-site qualitative research* (Herriott & Firestone, 1983). Due to the desire to test a universal set of principles across a range of different circumstances, multiple case study analysis was therefore used as a research strategy for this investigation and is discussed in more detail in Section 3.6.

Grounded theory (Glaser & Strauss, 1967) is principally an inductive approach where theory emerges from the process of data collection and analysis. The study does not start with a defined theoretical framework (although a clear research purpose is required), but instead the researcher identifies relationships between the data and then develops questions and hypotheses to test these (Strauss & Corbin, 1998). This strategy is difficult for an inexperienced researcher to adopt (Yin, 2009) and is likely to involve a lengthy time period and to be resource intensive (Robson, 1993).

Grounded theory is an inductive approach and should therefore only be used where there is little existing literature, and where timescales and risk are not important factors (i.e. an exploratory study). However, a wealth of literature was available in relation to this research project, the researcher was relatively inexperienced, and there were strict constraints on the timescales of the research which required a "one-take", low-risk approach. Grounded theory was not therefore used as a research strategy for this investigation as a more explanatory approach was desirable and feasible.

Ethnography is also firmly rooted in the inductive approach. Emanating from the field of anthropology, its purpose is to interpret the social world the research subjects inhabit in the way in which they interpret it. This is obviously a research method that is very time-consuming and takes place over an extended time period. The research process needs to

be flexible and responsive to change since the researcher will constantly be developing new patterns of thought about what is being observed.

Participant observation, which is the most common form of ethnography, may be appropriate in certain business situations in order to understand the organisational context and to get to the root of "what is going on". However, participant observation requires the researcher to immerse themselves in the research setting (Delbridge & Kirkpatrick, 1997) and to participate fully in the lives and activities of subjects, thus becoming a member of their group, organisation or community (Gill & Johnson, 1997). This level of immersion would be difficult to achieve in one case study, due to the commercially sensitive nature of the research, and would be impossible across the range of cases that were necessary for the research to be generalisable. Furthermore, as the researcher would become "part of the organisation", this would compromise the objectivity of the research effort. Ethnography was not therefore used as a research strategy for this investigation.

Action research is a research strategy in which the action researcher and a client collaborate in the diagnosis of a problem and in the development of a solution based on the diagnosis (Bryman & Bell, 2011). Thus action research differs from other research methods because of its explicit focus on action and in particular promoting change within an organisation (Marsick & Watkins, 1997). In addition, the person undertaking the research is involved in this action for change and subsequent application of the knowledge.

Action research is an applied form of research inasmuch as it aims to improve understanding of a particular business or management problem, and it results in a solution to that problem. The main aim of this investigation, however, is pure research, since it is being conducted in order to expand the general body of knowledge relating to sourcing strategies and to determine a universal set of principles with findings that are of significance and value to society in general. It should not be limited to specific organisational problems and should not be influenced by the subjects' objectives. Action research was not therefore used as a research strategy for this investigation.

3.3.4 The Research Orientation

This term refers to the general orientation to the conduct of the research in terms of the data collection methods. There is a choice to be made between quantitative and qualitative research.

There is much debate in the literature regarding the use of quantitative or qualitative research. Quantitative research uses numerical analysis to illustrate relationships among factors, whereas qualitative emphasises the description and understanding of the situation behind the factors (Chen & Hirschheim, 2004). Quantitative research concentrates on hard, generalisable survey data, while qualitative research deals with deep, rich observational data (Sieber, 1973). Quantitative research uses numbers, but qualitative research emphasises words (Onwuegbuzie & Leech, 2005). These differences have led to a great divide between quantitative and qualitative researchers who often view themselves as being in competition with one another.

Although there are a number of differences between the two approaches, there are also similarities. Both describe their data, construct explanatory arguments from that data and speculate about why the outcomes are as they are (Sechrest & Sidani, 1995). This is why Onwuegbuzie & Leech (2005) state that the polarisation of views is divisive and that relying on only one type of data is limiting. Quantitative data can help compensate for the fact that qualitative data cannot be generalised, and qualitative data can help explain the relationships discovered by quantitative means. This is why both orientations were used in this research project. Questionnaires enabled quantitative data to be collected and interviews elicited qualitative data.

A significant element of the data collection process used in this investigation was qualitative fieldwork, which has been subjected to a number of criticisms. Hammersley (1990 & 1992) questions its reliability (the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions) and its validity (the extent to which an account accurately represents the phenomena to which it refers). Silverman (1997) and Bryman (2008) refer to the lack of validity as anecdotalism, whereby an anecdotal approach is taken to the use of data in relation to explanations and conclusions.

The research design addressed these issues. Reliability concerns were overcome by having a single researcher and asking the same questions of all interviewees, while validity concerns were addressed by ensuring that extended transcripts, incorporating question responses and subsequent conclusions, were approved by the interviewees. Bryman (2008) acknowledges the usefulness of extended transcripts as a means to improve research validity (calling the process "respondent validation") and Kirk & Miller (1986) suggest that, in order for readers to be able to calculate reliability, the researcher must document their procedure. With this in mind, the interview questions are included in Appendix C and the findings appear in Chapter Four.

Another perceived problem of qualitative research is that Glaser & Strauss (1967) worry that it may be used as a "quick-fix" involving limited contact with the field, and that correlations may be based on variables that are arbitrarily defined and subject to merely common sense rather than scientific speculations. The research design mitigated these risks as well. The interviewees were key decision-makers who had an in-depth knowledge of and exposure to the sourcing strategies adopted by their organisations. Furthermore, the variables used were defined after an extensive literature review, and any correlations were assessed with reference to robust theoretical constructs.

Qualitative research is the only way that most business situations can be analysed, given the intangible and imprecise nature of the phenomena being measured. In fact there is a common belief among qualitative researchers that this type of research can provide a deeper understanding of business phenomena than would be obtainable from purely quantitative data. Despite its intangibility, Miles & Huberman (1984) assert that qualitative research can be highly structured.

Yin (2009) suggests three methods of ensuring effective qualitative research: (i) the development of a tight interview structure; (ii) the posing of clear and precise questions; and (iii) the use of theory and reviews of previous research to develop research questions. All of these methodologies were incorporated into the research design, thus demonstrating its robustness. Furthermore, the researcher has considerable business experience, something that Fielding & Fielding (1986) recognise as important.

Another way of improving the reliability of qualitative research is to quantify the intangible. Sechrest & Sidani (1995) argue that all data can be quantified. Onwuegbuzie (2003) agrees and puts forward two examples: (i) expressing a variable in a binarised form ("1" or "0"); and (ii) treating words arising from individuals as sample units of data. These have the effect of quantifying the qualitative data. There are two examples of this quantification process within this research project: (i) advantage-generating scores were devised by binarising the false/true responses into 0/1 figures; and (ii) competitive market characteristics were converted into numerical buyer and supplier ratings that determined the power relationship through the use of the power templates.

In conclusion, it can be said that there are perceived problems and risks with qualitative research, but careful research design has enabled them to be minimised in this study.

3.3.5 The Time Horizon

When conducting research, an important question to ask is whether the investigation is to be a "snap-shot" taken at a particular time or whether it should be a "diary" of events taken over a given time period. A *cross-sectional study* is the "snap-shot" approach to research. It involves the study of a particular phenomenon or phenomena at a particular point in time. A *longitudinal study*, on the other hand, is more akin to a "diary" approach where data is collected on a number of occasions over an extended period of time.

The main strength of longitudinal research is the capacity that it has to study change and development. Adams & Schvaneveldt (1991) state that in observing people or events over time the researcher is able to exercise a greater degree of control over the variables being studied. However, on a practical level, Gray (2009) points out that most research projects undertaken for academic courses are likely to be cross-sectional as they are necessarily time-constrained. However, it is possible to introduce a longitudinal element to the research by analysing published data that has been collected over time.

This research project is essentially a cross-sectional study, since there are strict time constraints imposed by the awarding body. It was only possible to gather primary data relating to sourcing strategies by means of a survey and case study analysis at one point in time. However, it was possible to incorporate a longitudinal element into the research

design by analysing secondary data regarding the financial performance of the case study participants over a five-year basis in order to establish whether sustainable competitive advantage had been achieved.

3.4. Developing a Fair Test of the Research Questions

Once the strategic research design issues had been decided, it was essential to devise a fair test of the hypotheses. This section looks at the two research questions, identifies what would be ideal tests for them, discusses the empirical barriers to achieving the ideal tests, and puts forward the fair tests that were eventually used in the research.

3.4.1 Testing Research Question One

The first research question asserts that proactive sourcing strategies lead to sustainable competitive advantage but reactive approaches do not. In order to test this, there needs to be an equal number of proactive and reactive cases. However, there are two types of proactive sourcing strategies (supply chain management and supplier development) as well as two types of reactive (supply chain sourcing and supplier selection). The test would therefore need to ensure that all of these four sourcing strategies were assessed.

A preliminary survey was carried out to identify the spread of sourcing strategies that exist within typical organizations. The findings indicated that the sourcing strategies adopted by the surveyed organisations conformed to the distribution of: 9% for supply chain management; 21% for supply chain sourcing; 35% for supplier development; and 35 % for supplier selection (see Figure 3.3).

The closest fit to this distribution would be to use a minimum of 12 cases: 1 case of supply chain management (8.34%), 3 cases of supply chain sourcing (25%), 4 cases of supplier development (33.33%), and 4 cases of supplier selection (33.33%). However, in order to ensure the generalisability of the study, it was desirable to use more than one case for all sourcing strategies. This resulted in increasing the number of supply chain management cases from 1 to 2 and correspondingly reducing the supply chain sourcing

cases from 3 to 2. This still gave an equal number of proactive and reactive cases (6 each) and a good fit and balance with the preliminary survey findings (see Figure 3.4).

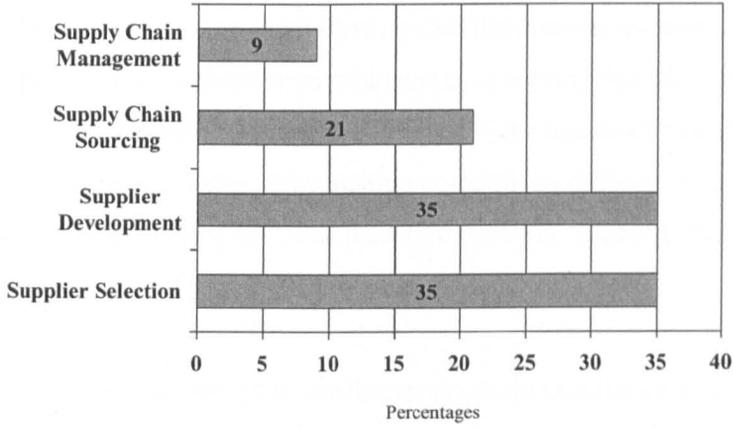


FIGURE 3.3: Sourcing Strategies Adopted by Surveyed Organisations

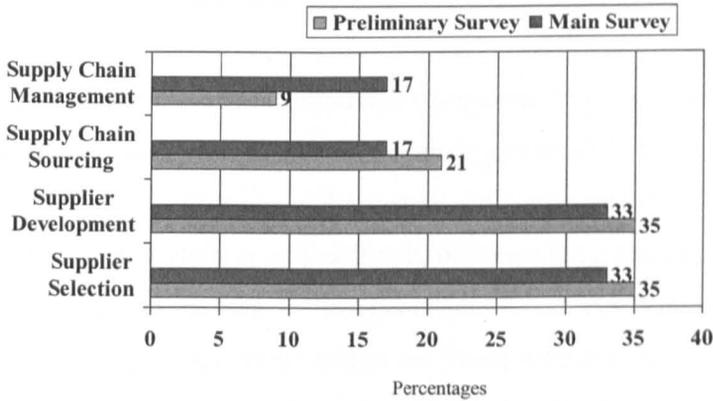


FIGURE 3.4: Spread of Main Survey Sourcing Strategies Compared With Preliminary Survey Findings

17% of the cases (2) related to supply chain management, 17% of the cases (2) were supply chain sourcing, 33% of the cases (4) encompassed supplier development, and 33% of the cases (4) comprised supplier selection.

Having established the number and type of cases required for analysis, an ideal test for Research Question 1 would be to measure the contribution of the sourcing strategy to the overall profitability of the company in relation to its competitors. This would demonstrate whether the sourcing strategy allows the company to earn above industry-normal returns over an extended time period (the measure of sustainable competitive advantage). However, there were problems in achieving this ideal test. The first problem is that "profit" is a rather imprecise concept and the means of calculating it can vary from one organization to another, thus making comparison difficult. A common performance measure of "profit before tax" was therefore used but, although this addressed the issue of comparability, there were other concerns.

A second problem is that profit levels can be attributable to a range of different performance factors other than the sourcing strategy adopted. Any benefits from a sourcing strategy, for instance, may be dissipated by other strategies within a company. Isolating the variables was not possible which made it difficult to demonstrate causal links. Luck may also play a part. Both Barney (1986) and Stinchcombe (2000) note that any organization can encounter runs of good and bad luck and that it is very difficult to distinguish between good luck and a good strategy in any given case.

A third problem is that it was found that companies do not generally measure the profitability of their sourcing strategies, tending to view them as a means of cost reduction only or not to measure them at all. Of course, measuring the profitability of a specific sourcing strategy is very difficult, but there are a number of objective indicators that could be measured, such as "market closure", "increased revenue", "differentiated product", "increased capability" and so on. These would indicate that the sourcing strategies make a contribution to increased functionality as well as reduced cost, thus increasing the likelihood of sustainable competitive advantage being achieved. However, the surveyed sourcing strategies were generally only measured on their cost reduction capability.

Due to the lack of an objective measure of profitability and a lack of any objective indicators, it was recognized that a robust measurement of profit for a particular sourcing strategy would not be possible. It was possible to measure a company's overall performance against its peer group over five years using secondary data, but it was not

clear whether the performance was due to a particular sourcing strategy or some other factor. Furthermore, there were no objective indicators to help in this assessment. Although the ideal performance measure for sustainable competitive advantage would be an objective one, such as “the achievement of long-term rents”, a proxy performance measure had to be used instead, based on whether the sourcing strategy has the potential to be advantage-generating and thus achieve sustainable competitive advantage.

Since the ideal test of Research Question 1 was not possible, a fair test was developed instead. A proxy measure of sustainable competitive advantage (the advantage-generating potential) was devised using Collis & Montgomery's (1995) five tests of inimitability, durability, appropriability, substitutability, and competitive superiority. Using this proxy measure it was possible to determine an advantage-generating score for each sourcing strategy and hence their potential to achieve sustainable competitive advantage. The proxy measure is actually more useful than the objective one because it is now possible to link an advantage-generating score directly to a specific sourcing strategy. It is therefore seen as a fair test for Research Question 1 in this investigation.

3.4.2 Testing Research Question Two

The second research question asserts that proactive sourcing strategies only achieve sustainable competitive advantage if buyer dominant or interdependent power relationships exist. In order to test this, only the six proactive cases need to be considered. Furthermore, it can be assumed that, since the test is only to consider proactive sourcing, then independent power relationships will not apply. This is because proactive sourcing requires the buyer and the supplier to work together collaboratively and there is no incentive to do so where an independent power relationship exists. The other three types of power relationship (buyer dominance, interdependence, and buyer dependence) all need to be tested.

An ideal test would be for the six cases to comprise an equal number of the three relevant power relationships (i.e. two of each). However, this was complicated by the fact that different power relationships occur at different tiers of the supply chain and only one case of direct buyer dependence (at the supply chain tier closest to the buyer) within a proactive sourcing context could be found among the participating organisations. This is

not really surprising, given that the procurement managers were professional and experienced buyers who are unlikely to enter into proactive relationships with direct suppliers that were dominant unless they had no choice.

Although direct buyer dependence could only be found in one case, this type of power relationship was evident in other cases albeit at a supply chain tier that was one-stage removed from the buyer. This enabled a fair test of the second research question to be carried out. Ideally, the cases should have incorporated the desired power relationship throughout the supply chain, but this was not possible for the two buyer dependent situations. In the event, 2 buyer dominant and 2 interdependent cases were tested (the power relationships were consistent throughout the whole supply chain), along with 2 buyer dependent cases (where there was a mix of different power relationships with at least one of the relationships being direct buyer dependence). This was seen as a fair test of the research question.

3.5. Ensuring the Validity of the Research Findings

Ensuring the validity of research findings is of the utmost importance. Raimond (1993) refers to the "how do I know?" test when evaluating whether the evidence and conclusions stand up to the closest scrutiny. There are two types of validity that should be considered: (i) external validity; and (ii) internal validity. These are both discussed below in relation to the research design.

3.5.1 External Validity

External validity (sometimes referred to as generalisability) seeks to determine whether the results of a study can be generalised beyond the specific research context. Two major concerns are how the research subjects were selected to participate in the investigation and whether they comprise a representative sample. A discussion of the sampling methodology used in the research project therefore follows. Figure 3.5 should be referred to in relation to the discussion.

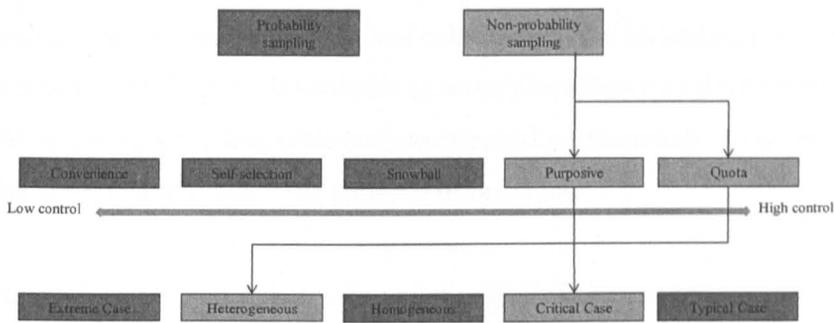


FIGURE 3.5: Sampling Techniques Flow Chart

Adapted from: Saunders, Lewis & Thomhill (2009)

Probability sampling involves a sample being selected using a random methodology in which each unit in the population has a known probability of being selected. It is based on the assumption that the sample will be statistically chosen at random and is therefore the most representative form of sampling. However, Gray (2009) points out that probability sampling is not possible for business research, and that the sample must be selected using non-probability methods.

Non-probability sampling (sometimes known as judgemental sampling) involves a sample being selected based on the judgement of the researcher. It implies that some units of the population are more likely to be selected than others and it is therefore essential that great care is taken in selecting the cases. Mason (1996) confirms that the selection of cases is very important in ensuring that the researcher produces results which have a wider resonance beyond the limited empirical parameters of the study.

The two types of non-probability sampling that were used in this research project were the quota and purposive methodologies, due to the high degree of control that they enable over the sample contents. Silverman (1997) suggests that both methods are effective ways of achieving generalisability. *Quota sampling* entails constructing a sample that reflects a population in terms of its relative proportions (Bryman & Bell, 2011) and is normally used for interview surveys (Cresswell, 2008). *Purposive sampling* is a design in

which the sample subject is chosen on the basis of its ability to provide the type of information needed by the researcher (Sekaran & Bougie, 2009). The cases that were selected demonstrated a good fit and balance with the preliminary survey findings and encompassed the range of variables necessary to achieve a fair test (see Section 3.4), as well as having knowledgeable and experienced professionals within each organization who were able to provide the required information.

Cresswell (2008) states that, although the relative costs and the degree of control over the sample contents is reasonable for purposive and quota sampling and that they are appropriate for working with very small samples, the likelihood of the sample being representative is dependent on the researcher's choice. With this in mind, the researcher adopted a heterogeneous selection approach, whereby a diverse range of organizations were selected in order to ensure the generalisability of the study. Table 3.2 shows the level of differentiation between the case study organizations and the sourcing strategies selected. This demonstrates, not only that the twelve cases are representative samples of the wider population, but that the research questions have been tested across a range of different sectors and circumstances. This gives a reasonable level of confidence in the results.

| ORGANISATION | MAIN ACTIVITY | ANNUAL TURNOVER | NUMBER OF EMPLOYEES | FOCUS | SOURCING CASE | SOURCING STRATEGY |
|--------------|-------------------------------|----------------------|---------------------|--------|--|-----------------------|
| FoodCo | Food | £124.7m | 1,572 | UK | 7: Potatoes 8: Carton & sleeve packaging | SD SCM |
| BlendCo | Food & drink | £773.2m | 1,710 | Europe | 1: Chemicals 9: Energy | SS SD |
| ExtractCo | Oil & gas (exploration) | £2.79bn (division) | 3,228 (division) | Global | 2: Drilling mud 10: Life of field seismic imaging | SCS SCM |
| IndirectCo | Oil & gas (indirect supplies) | £152.6bn (parent) | 104,200 (parent) | Global | 3: Facilities management 4: Low level legal services 11: Accounts payable 12: High level legal services | SCS SS SD SD |
| MechCo | Mechanical/ Electrical | £383.2m | 3,774 | UK | 5: M&E components | SS |
| PrimeCo | Construction | £9.36bn (consortium) | 83,162 (consortium) | UK | 6: Ready-mixed concrete | SS |

Key to sourcing strategies: SCM supply chain management SCS supply chain sourcing
SD supplier development SS supplier selection

TABLE 3.2: Breakdown of Cases

Using twelve cases for data collection introduced an element of trade-off between depth and breadth of coverage. Some case study analyses often look at one or two critical cases

only. However, these case study analyses are more inclined towards the interpretivist research paradigm (where the main aim is to understand what is taking place in a holistic way within an exploratory study) and which adopt an inductive approach (where data are collected and a theory developed as a result of the data analysis). This research project does not conform to this way of thinking, as it is mainly positivist and deductive by nature. A model and research questions based on the literature had already been constructed prior to data collection, and the aim of the research was to test the theory across a range of different situations in order to assess their generalisability. There is a strong need to select samples of sufficient size in order to generalise conclusions. The use of a number of heterogeneous cases within the survey research strategy is therefore justified.

Although the use of a number of heterogeneous cases is justified, due to the mainly positivist and deductive nature of the research, there was also a desire to gain a greater understanding of some of the contextual factors and intervening variables that occurred within the surveyed sourcing strategies. Three critical cases were therefore chosen to be assessed in greater depth as part of a critical case analysis. This enabled the research design to attain both breadth and depth: breadth was achieved by the case survey of twelve heterogeneous cases and depth was achieved by the critical case analysis of three critical cases.

The three critical cases were chosen based on the findings from the case survey and whether they achieved sustainable competitive advantage based on the proxy measure of advantage-generating score. The three cases are: (i) a proactive case that achieves sustainable competitive advantage (a high advantage-generating score); (ii) a reactive case that does not achieve sustainable competitive advantage (a low advantage-generating score); and (iii) a proactive case that only achieves a moderate advantage-generating score). A reactive case that achieves sustainable competitive advantage would also have been included in the case study analysis, but this was not possible since none of the reactive cases attained a high advantage-generating score. As it is, the three cases were a representative sample of the case survey outcomes.

3.5.2 Internal Validity

Internal validity is concerned with whether the findings are really about what they appear to be about. It relates mainly to the issue of causality and seeks to measure whether there is a true causal relationship between two variables. The positivist paradigm seeks to establish cause and effect relationships which are very difficult to prove in a business and management context. Although a correlation may be established, it is difficult to prove categorically that the independent and moderating variables have a direct effect on the dependent variable, since there are so many other potential intervening variables in a typical business context.

To prove the research questions beyond doubt would entail manipulating the variables within a controlled experiment in order to test the cause and effect relationship. For instance, if a particular proactive sourcing strategy allied to buyer dominant power relationships led to sustainable competitive advantage in a particular organisation, then it would be interesting to discover whether this would still be the case if the sourcing strategy was changed to reactive or if a buyer dependent power relationship existed. Only by isolating each variable in turn and running the study again would true cause and effect relationships be proven, but this would obviously be impossible in the context of an on-going business situation.

In order to address the issue of causality, elements of the interpretivist paradigm were incorporated into the research study. The case survey interviews were used to identify possible second-order causes for sourcing strategies achieving sustainable competitive advantage other than those already identified (proactive sourcing; buyer dominant or interdependent power structure). These intervening variables (nature of the purchase; objective of the sourcing strategy; degree of commitment to and investment in the sourcing strategy) were then investigated further within the critical case analysis, where three critical cases were analysed in greater depth. By combining a general survey and a critical case study analysis, it was possible to determine the strength of the relationships between the independent, dependent, moderating and intervening variables, thus giving confidence in the research findings.

Another issue that relates to causality is the potential for "method effects". There is an inevitable relationship between the research method employed and the results obtained, thus affecting causality. In order to overcome this problem, a triangulation approach was adopted to the research. Since it is impossible to ascertain the nature of the effect that a particular research method has on the findings, it makes sense to use different methods in order to cancel out the "method effect". Secondary data, interviews, questionnaires, a case survey, and critical case analysis were therefore all used as part of this research project to establish the advantage-generating potential of different sourcing strategies, thus giving confidence in the conclusions.

Srivastava & Teo (2006) identify two types of triangulation. *Across-method triangulation* checks the external validity of the results (i.e. triangulates the qualitative data with the quantitative data), whereas *within-method triangulation* checks the internal consistency of the results (observation, archival data, questionnaires, interviews). Both forms of triangulation were used within this research project. Across-method triangulation entailed the use of both case studies and surveys, thus ensuring external validity. Within-method triangulation consisted of archival data, questionnaires and interviews within the case study approach, thus ensuring internal consistency.

3.6. The Research Process

The previous sections discussed the paradigms, approaches and orientations of the research design, the tests that were developed in order to answer the research question, and the steps taken to ensure the validity of the research. These were the strategic issues that needed to be addressed before research began. This section is concerned with the tactical issues of the research process and the finer details of data collection and analysis. There were three key stages to the research process: (i) the initial research stage; (ii) the main research stage; and (iii) the deduction stage. Figure 3.6 gives a flow chart of the research process encompassing the three stages, and a detailed discussion follows of the activities that were carried out and the issues that were encountered at each of the stages.

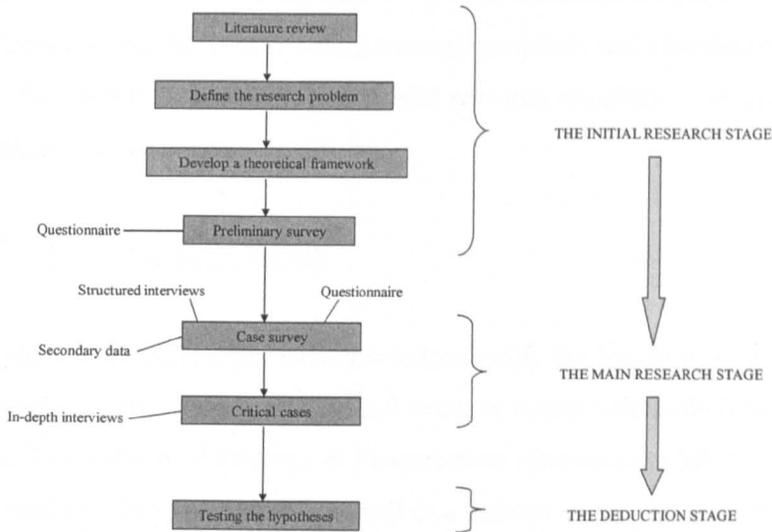


FIGURE 3.6: Research Process Flow Chart

3.6.1 The Initial Research Stage

Preliminary data gathering took place by means of a literature survey. The aim of this was to gather secondary data and identify the real issues and root causes, rather than manifest symptoms, as well as establishing the situation variables. The literature survey used on-line databases, accessed through the internet, to identify relevant sources from 3,500 international business and management journals. This was an abstract database which gave a bibliographic citation and summary of articles, thereby helping to reduce wastage. The full-text version of articles could in most cases be downloaded. On-line searches such as this are very useful as they save much time, are thorough in their use of references, can be fine-tuned to focus on material that is key to the research effort and are relatively inexpensive. A number of sourced articles revealed further relevant sources and these could then be followed up.

Once the initial data gathering had taken place, it was possible to define the research problem. There appeared to be a gap between current academic and business thinking (the adoption of a set of best practice principles determines whether purchasing can contribute to sustainable competitive advantage) and the findings of the literature review (it depends on the sourcing strategy adopted). A theoretical framework was then

developed, consisting of a dependent variable (sustainable competitive advantage), an independent variable (the sourcing strategy adopted), and a moderating variable (the inter-firm power structure). This enabled research questions to be generated that could be tested in order to support the theory.

3.6.2 The Preliminary Survey

The aim of the preliminary survey was to identify the spread of sourcing strategies that exist within typical organizations and to act as a selection method for the main research stage. Two cohorts of Strategy & Procurement Management MBA students at the Birmingham Business School, as well as a number of the researcher's business contacts, were used as the survey group. They were all procurement practitioners and work for a range of different organizations in different industries, thus making them a representative sample of the wider population. Furthermore, most of them (the MBA students) regularly assembled together as part of their study programme, thus enabling the questionnaire to be personally administered. Care was taken not to include public sector buyers in the survey, as the nature of the research project (relating to competitive advantage) is not applicable to their organizations.

The questionnaire and covering letter are included in Appendix A. The use of questionnaires is an appropriate data collection mechanism when the researcher knows exactly what is required and how to measure the variables of interest. This is certainly the case in terms of the variables relating to sourcing strategies and power relationships.

Three questions were devised: one for each variable. Each question lays down a description of the possible options under each variable and respondents are asked to choose that which is applicable. For instance, Question 1 covers four sourcing options: (a) supplier selection; (b) supply chain sourcing; (c) supplier development; and (d) supply chain management. Similarly, Question 2 incorporates descriptions of four power relationships: (a) buyer dominance; (b) interdependence; (c) independence; and (d) supplier dominance.

The inclusion of such detailed descriptions is to make the choices as mutually exclusive and collectively exhaustive as possible. Furthermore, the questions are “closed”,

inasmuch as they force the respondent to choose from a set of alternatives given by the researcher. According to Sekaran & Bougie (2009), this enables the respondent to make quick decisions and facilitates the coding of information for subsequent analysis by the researcher.

Within each question most organizations are likely to demonstrate compliance with more than one of the given options, if not all four, as different supply chains are likely to require different approaches. A box has therefore been included for the respondent to give examples of supply chains that conform to the alternative descriptions given. This enabled certain supply chains to be identified for subsequent analysis if the organization was chosen as a case study subject.

Ensuring an effective response rate for the return of questionnaires is always a problem, but a number of features were incorporated into the survey in order to address this issue. First of all, the questions were designed so that they can be answered quickly by means of a tick and some additional information in note form, thus reducing the amount of time that a respondent had to spend on completing the questionnaire. Another motivation to reply was the possibility of being chosen as one of the case studies, thereby benefiting from free consultancy work in return for access to the organization. This incentive is referred to in the covering letter and on the front sheet of the questionnaire.

Personally administered questionnaires also lead to a better response rate. This is an effective way to collect data, as personally administered questionnaires are quick and inexpensive to administer, enable the research topic to be introduced as an aid to motivation, and can be completed and collected instantaneously. Furthermore, any doubts the respondents might have regarding any of the questions can be clarified on the spot, leading to a more consistent response.

One of the problems with the questionnaire is that the answers are limited to dyadic relationships with immediate suppliers, as there is only room for one answer, even though different types of relationship are likely to exist throughout the supply chain network. This is falling into the trap of “dyadic atomization” that was mentioned in the literature review, where firms are analysed outside of their embedded context. However, expanding the scope of the questionnaire to evaluate the variables throughout each stage

of the supply chain would have made it too complicated and time-consuming to complete. The issue was addressed, however, during the main research stage, which is discussed later.

In terms of sustainable competitive advantage, it is difficult to elicit information on this variable at the questionnaire stage. Data is required relating to the profits of the organization as well as the profits of its competitors or some sort of industry standard. The respondent is not likely to have this information to hand and to acquire it is rather time-consuming. For this reason, a question relating to sustainable competitive advantage was not included in the questionnaire, because it would have had a detrimental affect on the response rate of the survey. This issue was also addressed during the main research stage.

Due to the fact that the questionnaires were personally administered, the response rate was very good at 91%. In total, thirty-two questionnaires were completed. Figure 3.3 shows the percentage spread of sourcing strategies that these surveyed organizations adopt. The occurrence of supply chain management as a sourcing strategy is only 9%, whereas the figures for supply chain sourcing (21%), supplier development (35%) and supplier selection (35%) are substantially greater. These findings enabled a representative sample of case study participants to be selected for the main research stage, which is discussed in the following section.

3.6.3 The Main Research Stage

The main research stage consisted of a case survey of twelve heterogeneous cases and an additional critical case analysis of three critical cases. In terms of the case survey, a representative sample of cases was selected based on the preliminary survey findings (Figure 3.4 shows the spread of the surveyed sourcing strategies compared with the preliminary survey findings and Table 3.2 gives a breakdown of the cases). The three critical cases were selected based on the findings of the case survey. Using a combination of data sources and data collection methods improves the validity and reliability of research (Mentzer & Flint, 1997; Ellram, 1996), therefore the main research stage was

conducted using a combination of secondary data, questionnaires, and interviews. These are all discussed in the following sections.

3.6.4 Secondary Data

Secondary data was used as part of the research. The aim was to ascertain whether the case study organizations had achieved above industry-average profits over the previous five years (the measure of sustainable competitive advantage). In order to capture this data, the FAME on-line database was accessed to obtain the long-term financial performance of the case study organizations in relation to their competitors. The results can be found in Chapter Four. Although it was possible to measure the financial performance of the surveyed organizations using this approach, it was not possible to identify whether this performance was due to particular sourcing strategies or some other reason. Primary research was required for this purpose, which is discussed in the following sections.

3.6.5 Interviews

Interviews were used as part of the research. The aim of the interviews was to establish primary data such as contextual factors (background information on the company's activities and sectoral constraints), structural factors (the sourcing strategies adopted; the inter-firm power structures), as well as perceptions, attitudes and other behavioural responses. The findings from the interviews are shown in Chapter Four.

Since testable research questions had already been formulated, critical factors for discussion were easily identified. It was therefore possible to conduct structured interviews, since the researcher knows exactly what information is needed and can compile a pre-determined list of questions. It is important when conducting interviews not to ask leading questions. The answers must come from the interviewees and not simply arise as a self-fulfilling prophecy (Dick, 1990). The same questions were asked of all respondents in the same manner, thus ensuring consistency. However, the researcher also exercised an element of flexibility by following the lead from some of the respondent's answers in order to ask other relevant questions that were not on the schedule, thus clarifying certain issues.

Five interviews with key decision-makers were conducted for each of the twelve cases, making a total of sixty interviews (see Appendix E for details). The interviews were face to face in order that questions could be adapted, uncertainties clarified and non-verbal clues revealed. The interviewer aided the interview process by establishing credibility and rapport, by asking questions in an unbiased way, by clarifying complex answers, by helping the respondent to think through issues and by taping the interview, and producing a transcript so that there was a permanent record of the proceedings. According to Sekaran & Bougie (2009), these are all examples of good interview practice.

A pre-set series of questions was devised for use with the interviews. These were sent in advance to each of the interviewees to facilitate their preparation for the interview and acted as a framework for the ensuing discussion. The questions are shown in Appendix C.

Questions 1 and 2 are general background questions and seek to gather data on the contextual factors of the organization and its procurement activities. The following questions concentrate on the structural factors identified during the literature review and incorporated into the model in Figure 2.6. In order for organizations to adopt advantage-generating sourcing strategies, there needs to be an understanding within the enterprise of the four sourcing options available, a good level of support in existence and the absence of any detrimental internal or external conformity pressures. Questions 3 to 6 inclusive seek to clarify these issues.

The selection of a particular sourcing strategy needs to conform to an economic rational decision-making model in order for an optimum choice to be made. Question 7 seeks to evaluate the extent to which this occurs. The question is divided into four sub-questions and asks for straight "true" or "false" answers. It is therefore possible to score the responses as a percentage in order to quantify the results. For instance, a response of (a) "true", (b) "false", (c) "false" and (d) "false" would indicate that the enterprise's decision-making processes are 100% rational, whereas one opposite response would give a 75% rating and so on.

Before the interview, one or a number of specific sourcing strategies had been selected. Questions from number 8 onwards were therefore asked against each different scenario, such as an item of spend that was procured using supplier development and another utilizing supply chain sourcing, for instance.

This enabled the full range of sourcing strategies to be assessed across the six participating organizations.

Whether a sourcing strategy leads to sustainable competitive advantage may depend on the power relationships that exist. Questions 8 to 18 seek to establish these power relationships. In order to avoid dyadic atomization, the relationships throughout the whole supply chain are analysed, rather than just the first-tier suppliers and customers. A lot of qualitative data was gathered at this stage of the interview and there was a need to summarise the discussion in some quantifiable form. A series of templates was therefore used, which can be seen in Appendix D.

These templates have been developed within the Birmingham Business School over the years and are a useful way of summarizing in a quantitative way what would otherwise be an extensive, qualitative discussion. Buyer Element 1 template, for instance, summarises the findings of Questions 8 to 12 inclusive and the three templates referring to Supplier Elements 1, 2 and 3 summarise Questions 13 through to 18. Finally, the Results Table enables a composite supplier rating to be calculated taking into account the relative importance of the three supplier elements already established. This can then be compared with the buyer rating in order to establish the type of power relationship that exists.

The next set of questions seeks to evaluate the performance of the sourcing strategy being studied. Questions 19 to 22 inclusive seek to identify the relevant benefits, drawbacks and effects of the sourcing strategy and whether it is seen as successful by key decision-makers in the organization. Questions 23 and 24 seek to ascertain the financial performance of the sourcing strategy. These questions, however, are qualitative and what is needed is an objective measure of whether the sourcing strategy leads to sustainable competitive advantage.

Although it was possible for the profitability of each case study organization in relation to its competitors to be identified through secondary research, it was not possible to ascertain objectively whether individual sourcing strategies led directly to this performance. Question 25, therefore, utilizes a proxy measure of sustainable competitive advantage (the advantage-generating score). This proxy measure is based on the five tests identified in Chapter Two and seeks to establish whether the sourcing strategy is: (i) inimitable (whether it is difficult to copy), (ii) durable (how quickly it depreciates), (iii) appropriable (whether its value can be retained without passing it on to others), (iv) substitutable (whether it can be replaced by an alternative), and (v) competitively superior.

Question 25, as with 7, is sub-divided and requires "true" or "false" answers, thus lending itself to quantitative scoring. If all nine sub-divisions are given a "true" response, then this would indicate that the sourcing strategy is 100% advantage-generating, whereas one "false" response would indicate an 89% rating and so on. This enables a proxy performance measure to be established that determines whether the sourcing strategy leads to sustainable competitive advantage.

Supplier selection is the sourcing strategy which appears to have the least potential to be advantage-generating. It is therefore useful to compare other sourcing strategies with this approach as a benchmark. Question 26 was included with this purpose in mind. However, participants may find it difficult to compare an existing strategy against an imaginary one, therefore cases that had previously used supplier selection as the sourcing strategy were chosen wherever possible. In the four cases where supplier selection was the sourcing strategy being evaluated, then Question 26 was obviously not used.

The interviews ran smoothly and the data gathered was sufficiently robust to give confidence in the findings. The interviewees were experienced, knowledgeable professionals who had a solid understanding of the practical situation and the theoretical concepts. The questions worked well and their design elicited appropriate responses from the participants. Five respondents were interviewed regarding each of the twelve cases, thus capturing multiple interpretations of the data. These views, plus the researcher's conclusions, were consolidated into extended transcripts which were then validated by the respondents.

3.6.6 Critical Case Analysis

An analysis was carried out on three critical cases in order to gain a richer understanding of the contextual factors and intervening variables pertaining to the sourcing strategies. The selection of the cases was based on the findings of the main survey and they were a representative sample of the outcomes. Further interviews were conducted with the key decision-makers who were questioned during the general survey stage. The case study interviews were in-depth and exploratory, but also directed. Although there were no predetermined and standardised questions, the researcher had a clear idea about the aspects he wished to explore and directed the interview accordingly. The findings of the critical case analysis are shown in Chapter Four and the framework used for conducting the interviews is included in Appendix F.

3.6.7 The Deduction Stage

Once research data had been collected, analysed and interpreted, it was possible to move on to the deduction stage, where it was established whether the research questions were substantiated and whether the research question had been answered. While the findings appear to support the research questions, there could have been other factors that affect the relationships between the variables other than those that were identified before and during the investigation. Further research would therefore be useful to validate the findings.

Another caveat to the findings is that it was not possible to objectively measure the relationship between individual sourcing strategies and sustainable competitive advantage. Profitability is the measure of competitive advantage, but the surveyed organisations did not objectively measure the profitability of their sourcing strategies and it was not possible for the researcher to do so either. A proxy measure of advantage-generating potential was used instead. Although this was based on robust principles, a further study incorporating actual performance measures for each sourcing strategy would be beneficial, albeit difficult to achieve.

3.7. Chapter Conclusion

The main aim of this investigation is pure research, since it is being conducted in order to contribute to the body of knowledge about sourcing strategies and their relationship to sustainable competitive advantage. Due to the established and accepted procedures that are available, the thinking behind this research project is predominantly based on the positivist paradigm. A model and research questions are constructed based on the literature, which are then tested across a range of different situations in order to assess their generalisability. A deductive approach to this research project was chosen, since it is a robust approach which is driven by theory rather than observation. Certain interpretative elements were incorporated into the research in order to identify the contextual factors and second-order findings.

It was possible to devise fair tests for both research questions. External validity was ensured by selecting a representative sample of cases based on quota and purposive sampling methodologies. A heterogeneous selection approach to the main survey enabled the research questions to be tested across a diverse range of contexts and situations, thus ensuring the generalisability of the research. A further analysis of critical cases meant that depth was achieved as well as breadth. Internal validity was ensured by determining the strength of the relationships between the independent, dependent, moderating and intervening variables, and by using a range of different qualitative and quantitative data collection methods in order to overcome any method effects.

A preliminary survey was conducted in order to identify the spread of sourcing strategies that exist within typical organizations and to act as a selection method for the main research stage. The main research stage took place by means of a case survey, comprising secondary data, structured interviews and a questionnaire, along with a critical case analysis based on directed in-depth interviews. Multiple cases were used in order to examine patterns across a number of different situations, and a number of interviews and questionnaires were conducted in order to gather multiple interpretations of data.

The research design was robust and the implementation effective. The results can therefore be treated with confidence. The deduction stage of the research showed that the

findings appear to support the research questions. However, as with most business research, it is not possible to prove the research questions beyond doubt. Further research will help to validate the findings, but in the mean time this work has made a useful contribution to the body of knowledge in this area.

Chapter Four

Case Survey Findings

4.1. Chapter Introduction

This chapter contains the findings from the case survey. Section 4.2 gives an introduction to the six organisations which participated in the case survey and Section 4.3 explains the background to the twelve cases.

Section 4.4 presents the findings related to the financial performance of the case survey organisations. Sustainable competitive advantage is achieved by earning above average profits over an extended time period. The case organisations' financial performances were therefore analysed in relation to their peer groups over a period of five years. This enabled an assessment to be made as to whether the case organisations achieved sustainable competitive advantage.

Section 4.5 presents the findings related to the type of sourcing strategies deployed by the case survey organisations. Each of the twelve sourcing strategies were analysed in terms of the degree of collaboration and integration that exists (product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations) and the basis of the collaboration and integration (first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed (supplier selection, supply chain sourcing, supplier development, or supply chain management).

Section 4.6 presents the findings related to the advantage-generating potential of the twelve sourcing strategies deployed by the case survey organisations. Since there is no explicit measure of whether specific sourcing strategies deployed by the case organisations achieve sustainable competitive advantage, a proxy measure was devised. This entails a set of nine tests based on Collis & Montgomery's five criteria of

inimitability, durability, appropriability, substitutability, and competitive superiority in order to identify the advantage-generating potential of each of the twelve selected sourcing strategies. The interviewees were asked whether the sourcing strategy passed each of the nine tests and the mode response is used to ascertain the advantage-generating score of the sourcing strategy. This enabled Research Question 1 to be tested.

Section 4.7 presents the findings related to the power analyses of the twelve sourcing supply chains. The literature review concluded that sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. A power analysis was therefore undertaken which determined the relative power resources of the buyer and supplier in terms of utility, scarcity, information asymmetry and switching costs at each stage of the twelve supply chains. The interviewees were asked to rate the buyer and seller according to a predetermined scoring system and the mean responses were used to determine the type of power relationships that exist. This enabled Research Question 2 to be tested.

A detailed discussion of the findings appears in Chapter Five.

4.2 Background to the Case Survey Organisations

Six organisations participated in the case survey analysis. A general background to each of the organisations follows below. In recognition of confidentiality agreements, the organisations have been made anonymous.

4.2.1 FoodCo

FoodCo is a food producer with an annual turnover of £125m and a procurement spend of £70m per annum. The company makes high-quality, own-label ready meals for the retail trade. Their major customer is an up-market supermarket whose business represents 70% of their turnover. FoodCo is part of a much larger group who, with an annual turnover of £1.6 billion and a procurement spend of £1 billion, is one of the largest food production companies in the UK. The group consists of 25 different business units who make branded products, such as pies, cakes and bread, as well as customer-facing businesses such as FoodCo.

The food industry, particularly the market for ready meals, is expanding rapidly (16% per year). It is a very competitive market with a number of different companies offering products that vary substantially in quality and with increasing price pressure from the retailers. Price is the order winner, with quality and delivery being the market qualifiers.

The procurement activities of the group have traditionally focused on production spend but, with the appointment of a new Chief Executive and a new Procurement Director at group level for the first time, all expenditure is now being looked at. The procurement structure is currently in a transitional stage, with some spend categories being managed across all 25 business units and others being site specific. There are highly developed information gathering mechanisms in place for production spend categories, but the non-production side is less advanced.

The reporting structure within the group is that the Procurement Director oversees a Steering Committee, comprising one member from each of the four business divisions, which in turn formulates the strategy for each business unit within the division. Category

Managers within each business unit are responsible for the day to day management of external spend.

FoodCo has a well-developed procurement function and over the last five years has developed robust strategies for managing spend categories and effective delivery systems. They operate a strategic sourcing process for new purchases and for ad hoc reviews which is conducted by cross-functional teams and consists of the following stages: understanding the demand requirements; market analysis; sourcing price history; price/cost analysis; supply chain analysis; opportunities for collaboration; technical developments in the industry; vulnerability analysis; portfolio analysis; consideration of sourcing options; sourcing strategy decision; and the compilation of a sourcing strategy document.

4.2.2 BlendCo

BlendCo is the largest UK producer of a key ingredient that is used in the production of almost all food and drink items. It has 50% of the market share for this ingredient in the UK, which represents an output of 1.1 million tonnes per annum. BlendCo has one major competitor, which has 35% of the market, and there are also a few smaller distributors. BlendCo produces not just the raw ingredient, but also derivatives around it, and it has progressed over the years to producing blended products for the drinks as well as the food industry.

In addition to the UK, it also has operations in China and Poland, which are being expanded rapidly. BlendCo is a key part of a major food conglomerate and is the largest profit-making division of the company. The group is operated as a shell business (only 20 people work for it directly) and each company within the group is autonomous with their own Chief Executive.

BlendCo's third party expenditure is around £550m, of which £300m is directly related to the purchase of the key ingredient, which the purchasing department is not involved with. However, purchasing is involved in all aspects of the remaining £250m expenditure, working very closely with other parts of the business. Furthermore, some procurement activities are linked across the whole group and there are a number of group contracts in

place for IT and telecoms, MRO items, and indirect spend areas. A particular part of the business will act as the lead for joint initiatives. BlendCo, for instance, leads in energy, mobile telecoms and chemicals, while other divisions lead in other areas.

BlendCo operates a system of category management. There are six Category Managers who report to three Purchasing Business Managers (energy; e-sourcing; materials and indirect spend) who are accountable in turn to the Head of Purchasing. The purchasing department is highly developed with high status internally and throughout the group.

An e-procurement platform has been developed jointly with a technology provider and BlendCo are increasingly using e-sourcing and e-auctions wherever possible. A recent initiative is that the company now sells energy. It operates two CHP gas turbine plants, buying the gas and selling the electricity. As well as buying all the group's energy requirements on behalf of the parent company, BlendCo also sells electricity to outside organisations, which has proved to be very lucrative. Energy spend is over £100m per year and, out of the sixteen people who work in purchasing, four of them are in the energy team.

4.2.3 ExtractCo

ExtractCo is one of six divisions of a global oil and gas corporation. It is responsible for the exploration and production activities. The parent company's main activities are: the exploration and production of crude oil and natural gas; refining, marketing, supply and transportation; and the manufacture and marketing of petrochemicals. They have a growing presence in gas and power and also in solar power generation. They operate in 100 countries with well-established businesses in Europe, North and South America, Australasia and Africa.

There is a central procurement function within ExtractCo. At a broad level, the procurement function has devised clear processes and procedures that everyone in the organisation has to comply with and only procurement staff can sign contracts, thereby retaining the ultimate sanction. However, because of the specialist nature of this sector, procurement acts as a support service on specific projects. Technical staff are experts in particular niche market sectors, whereas procurement members have more generalised

commercial skills. Procurement undertakes contractor selection and contract implementation, whereas the technical experts decide which suppliers go on the bid list, establish the selection criteria and conduct most of the tender evaluation. In reality, both the technical experts and the procurement professionals work closely together on technical and commercial issues.

4.2.4 IndirectCo

IndirectCo is one of six divisions of a global oil and gas corporation. It is responsible for the corporate planning and support services for the other divisions. The parent company's main activities are: the exploration and production of crude oil and natural gas; refining, marketing, supply and transportation; and the manufacture and marketing of petrochemicals. They have a growing presence in gas, electricity, and solar power generation. They operate in 100 countries with well-established businesses in Europe, North and South America, Australasia and Africa.

IndirectCo has an external spend of approximately \$6.5bn per year and employs 60 full-time procurement staff, half of whom have responsibilities within the ICT business, which accounts for \$1.2bn of the total spend. Procurement has not been seen as strategic in the past and has been dispersed throughout the corporation. IndirectCo has only recently set up a centralised procurement team and it is therefore early days in its development. IndirectCo only controls a small portion of total spend, the rest being distributed throughout the business divisions. For example, only \$150m out of \$350m of temporary staff procurement is undertaken centrally and only half of the property management budget is controlled by the property function. IndirectCo deals mainly with support services, therefore its spend is generally non-strategic.

Since its inauguration the procurement function has been able to demonstrate the total corporate spend, which was not known previously, and has articulated a clear strategy about what it is trying to achieve. Rather than looking at who spends what, the function is taking a market sector approach. Strategies are being developed for the seven market sectors that the division operates in and value delivery opportunities are being identified on an annual basis for the next five years. A number of projects have been put in place to deliver that value.

4.2.5 MechCo

MechCo is one of the UK's most experienced independent specialist mechanical and electrical multi-service contracting companies. It offers a fully integrated solution for engineering, designing, building, installing and commissioning high-quality mechanical and electrical systems. Mechanical and electrical (M&E) products and services form a key element of a typical construction project. In general terms, M&E encompasses all heating, ventilation, air conditioning, refrigeration, lighting, controls and other electrical, sanitary, water and waste services. Their combined value can account for anything up to 50% of a project's total cost and a considerable proportion of the total construction risk. Their integration is critical to the success of a project.

In 2006 the overall M&E industry was valued at £12.1 billion, which is approximately 20% of the total UK construction output. The M&E industry is a sub-sector of the construction industry and is therefore heavily dependent on the performance of the sector generally.

There is not a specific procurement department within MechCo. Although certain employees are called Buyers, they tend to be quantity surveyors with a construction background. Procurement activity is limited to telephoning or faxing suppliers and asking for price and delivery details on required items in accordance to a design specification. There is no element of proactivity involved in the process, which is typical construction industry practice and operated by all small- and medium-sized companies outside of framework agreements.

All MechCo's management and design services are conducted in-house, whereas purchases tend to be M&E components or installation workers such as plumbers and electricians. In total, approximately 70% of a typical M&E package consists of bought-in items, the vast majority of which are of a commoditised nature. The project-based nature of the business ensures that there is no certainty of demand and long-term agreements with suppliers are not therefore possible.

4.2.6 PrimeCo

PrimeCo is a consortium of four individual construction companies brought together to bid for a design and build contract, valued at £485.5 million, for the first motorway toll road in the UK. The four members of the consortium and their relative position in the list of largest UK construction companies are: Company A (1st), Company B (3rd), Company C (6th), and Company D (30th). Combined revenues for the four companies total almost £10 billion and this would place them at number fifteen in a list of the largest companies in the UK. PrimeCo developed a management plan to ensure that the team operated in a truly integrated manner during the project.

Company A, an international engineering services company, offers a full range of services covering every phase of planning, construction, maintenance and renovation to clients within oil and gas, transport, infrastructure and industrial sectors worldwide. Company A has a turnover of £4.7 billion, almost half of which is in the UK market. The specialist area of activity within the transport sector (railways, highways and airports) accounts for approximately 19% (£850 million) of total turnover.

Company B serves the international markets for rail, road and power systems, buildings and complex structures. It delivers engineering excellence through cost efficient, value-for-money, customer focused solutions from minor works through to major infrastructure projects. It offers a wide variety of services to clients ranging from construct-only works contracts to complex asset-based, service-driven solutions. Major road projects are delivered through the Major Projects Highways Division, which is an industry leader in large design and construct, DBFO (design, build, finance and operate) and ECI (early contractor involvement) schemes. Company B has a turnover of £3.1 billion of which £1.9 billion is related to civil and other specialist engineering, design and management services, principally in transport and energy.

Company C was created in 1999, when it de-merged from a larger group. So although it is a relatively new company, it has a history that dates back almost a century, and a portfolio that includes some of the most high-profile projects in the UK and overseas. Company C was one of the first construction companies to recognise the potential of combining construction expertise with the provision of business services, pioneering new

funding models such as PFI (Private Finance Initiative) and PPP (Public Private Partnership). The company works in a wide range of sectors, including transport, health and education, defence and secure establishments, commercial property development, leisure and retail. Company C has a turnover of £1.9 billion, 75% of which is attributable to construction.

Company D is focused on providing the ability to develop, design, build, own, operate and maintain the UK's infrastructure. The Group's operations are undertaken through three business streams – capital projects, support services and investments, and slate. Major infrastructure and road projects are delivered through the civil engineering arm of the capital projects business. The different business units have been successful through a strong focus on delivering increases in profit rather than turnover, and through working closely with clients in the private and public sector. Wherever possible, the company attempts to establish long-term relationships with clients on a partnership basis to avoid traditional, adversarial contracts. Company D has a turnover of £931 million of which 39% is in building construction and 26% is in civil engineering.

Within each of the four companies, there are Procurement Managers and Supply Chain Managers with commercial expertise and there is also a purchasing function. Generally speaking, there is more procurement expertise at this first-tier stage of the construction supply chain than there is upstream, but it is by no means sophisticated or extensive. Because PrimeCo is a consortium, a team of procurement professionals was put together from the participating companies. From this arrangement, sub-teams were tasked with particular responsibilities, the make-up of which depended on the category of spend and the level of expertise available in each of the four companies.

4.3 Background to the Cases

Twelve sourcing cases related to the participating organisations were analysed. The background to each of the cases follows below.

4.3.1 Case 1: BlendCo's Chemicals Sourcing

Figure 4.1 shows BlendCo's chemicals sourcing supply chain.

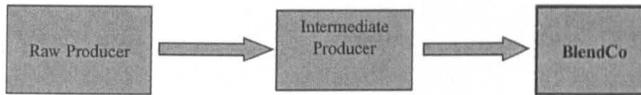


FIGURE 4.1: Case 1 - BlendCo's Chemicals Sourcing Supply Chain

BlendCo's chemicals requirements are usually purchased through an intermediate producer, which in turn obtains supplies of particular chemicals from a range of raw producers. Due to the fragmented nature of BlendCo's chemicals demand, purchasing directly from the second-tier suppliers is not viable and the intermediaries therefore act as consolidators, pooling the demand requirements from a number of different customers.

The whole industry is consolidating at the first-tier stage and there are now only a very few, extremely large intermediaries for the chemicals. Many of the chemicals can only be obtained through a single supplier, thus increasing the risk to BlendCo. There are three times as many raw producers as intermediaries, but the former sometimes have unique products which only they can manufacture. The raw producers often cannot make enough of a particular chemical to satisfy overall demand, therefore they rely on the intermediaries to top-up supply in these situations.

4.3.2 Case 2: ExtractCo's Drilling Mud Sourcing

ExtractCo's drilling mud sourcing supply chain is shown in Figure 4.2.

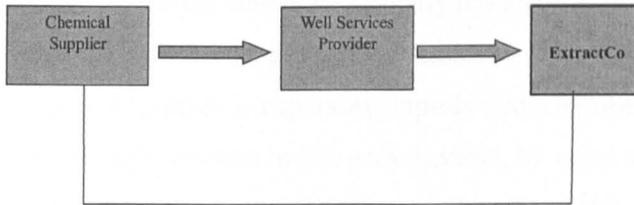


FIGURE 4.2: Case 2 - ExtractCo's Drilling Mud Sourcing Supply Chain

Drilling mud is required to lubricate the extraction operations on oil rigs. This is a highly technical process, requiring a great deal of expertise on the part of the supplier. Each drilling operation has different requirements, according to the nature of the terrain, and these are likely to change over the life of the field, thus necessitating a detailed initial assessment and on-going monitoring of operating conditions. The drilling mud is sometimes provided by a dedicated supplier, but on other occasions will be part of a package of well services provided by a generalist.

In the supply chain under consideration, ExtractCo had set up a new in-shore oil field in a remote and inhospitable part of the developing world. The drilling operation was rather small in size and there were doubts over the sustainability of the oil supply. For these reasons, only one supplier was prepared to provide well services in this environment and it also agreed to provide the drilling mud.

Some time after the contract had been signed, ExtractCo learnt that one of the key ingredients of the drilling mud was being purchased from a chemical company at a relatively low price and being charged to ExtractCo at a substantial premium. The well services provider was not willing to reduce their prices and insisted that the key ingredient was an essential part of the drilling mud which could only be sourced from the existing provider. ExtractCo therefore approached the chemical company with a view to

purchasing the ingredient directly on more favourable terms. However, the chemical company relied on the well services provider for a substantial portion of its business and did not want to jeopardise this relationship by dealing with ExtractCo directly.

In the short-term ExtractCo were unable to rectify this situation. It was locked into a contract with two suppliers who were virtually monopolies in their own parts of the supply chain. However, the supply chain dynamics have now changed. First, the supply of oil from the new location is expanding rapidly and a number of other reputable suppliers are willing to operate in this area. Second, by using supply chain sourcing principles and looking beyond its first-tier supplier, ExtractCo has identified another chemical which is a direct substitute for the key ingredient. Furthermore, it is more widely available and can be purchased at much lower cost. These two developments have had the effect of increasing ExtractCo's leverage over both the well services provider and the chemical supplier.

4.3.3 Case 3: IndirectCo's Facilities Management Sourcing

IndirectCo's facilities management sourcing supply chain is shown in Figure 4.3.

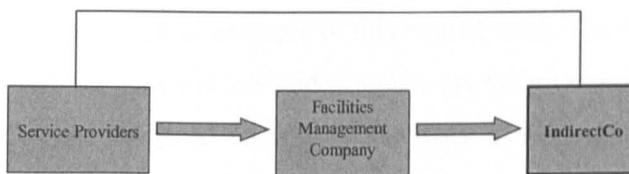


FIGURE 4.3: Case 3 - IndirectCo's Facilities Management Sourcing Supply Chain

A proportion of IndirectCo's facilities management requirement (for offices over a certain square footage) has been outsourced to an external provider, the remainder being dealt with at a local level. There is a recognition that using the facilities management

company leads to a lack of transparency further up the supply chain in terms of the provision of services such as security, cleaning etc. When asked for a breakdown of these service offers IndirectCo has not been able to get an answer from their supplier.

The facilities management company's total costs are made up of its margin, its operating costs and how effectively it purchases third party services. It is this third element that IndirectCo is unable to account for. It was therefore decided to disaggregate the supply chain and influence the choice made over the various service providers. This is particularly important in developing countries, where the use of local providers is part of IndirectCo's license to operate. This approach is therefore based on the overall business context, not just supply chain strategy.

IndirectCo does not want to deal with a plethora of small suppliers, but is imposing transparency on the facilities management company instead and in some cases specifying the upstream suppliers. IndirectCo's sourcing processes are often better than the intermediary's and they can find not only cheaper but better suppliers. IndirectCo is therefore using supply chain sourcing to improve the offering from the facilities management provider.

4.3.4 Case 4: IndirectCo's Low Level Legal Services Sourcing

IndirectCo's low-level legal services sourcing supply chain is shown in Figure 4.4. Conveyancing is a typical example of this type of work. There are many providers available, differentiation is low and suppliers are therefore interchangeable. The market is competitive and there are few barriers to entry. This is routine, standardised work that is non-strategic and an ideal situation for a reactive sourcing strategy based on commoditisation and market contestation.



FIGURE 4.4: Case 4 - IndirectCo's Low Level Legal Services Sourcing Supply Chain

4.3.5 Case 5: MechCo's Mechanical & Electrical Components Sourcing

MechCo's mechanical & electrical components sourcing supply chain shown in Figure 4.5 is part of a typical one-off construction project.

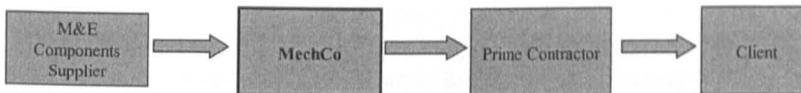


FIGURE 4.5: Case 5 - MechCo's Mechanical & Electrical Components Sourcing Supply Chain

The project involved the construction of a major new facility for a hospital, comprising of the design and construction of a 319-bed acute block comprising seven major

treatment departments (including accident and emergency and radiology), six operating theatres, ten 28-bed wards, a 77-bed mental health unit, teaching facilities, office accommodation and associated plant rooms. The project also included all the associated external works including new access roads, car parks and associated infrastructure services.

While a standard specification existed for the offices, toilets and other non-clinical rooms, the need for a sterile environment led to a highly specialised specification for key elements of the total M&E product and service offering. With these elements located in the major clinical areas (six operating theatres, three sterile treatment rooms and three large areas for consultation and treatment), it was imperative that a product of very high quality and reliability was specified. MechCo, operating as a second-tier supplier, integrated the whole M&E package into the project, having been appointed by the prime contractor rather than the end customer.

4.3.6 Case 6: PrimeCo's Ready Mixed Concrete Sourcing

Figure 4.6 shows PrimeCo's supply chain for the sourcing of ready-mixed concrete that was required for the construction of a toll motorway.

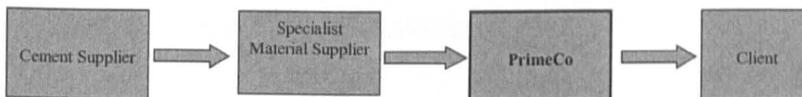


FIGURE 4.6: Case 6 - PrimeCo's Ready Mixed Concrete Sourcing Supply Chain

This one-off project involved the construction of a 27-mile dual three-lane (plus hard shoulder) toll road which provides an alternative to one of the busiest sections of motorway in the UK. It is the first motorway toll road to be built in this country.

The client is a private-sector company responsible for the project under a detailed agreement with the Government. This responsibility involved bringing together strong and experienced financial, design and construction partners to build the toll motorway. Once built, the client is also responsible for the operation and maintenance of the road for a 50-year concession period.

The design and build contract for the project, valued at £485.5 million, was awarded to PrimeCo, which is a consortium of four individual construction companies brought together for this particular project.

The main supplier of ready-mixed concrete is a specialist material supplier, which is part of a leading international producer and supplier of materials, products and services used essentially in the construction industry. The cement supplier is one of the UK's leading manufacturers of high quality cement. It supplies cement-based products to all sectors of the construction industry, including concrete product makers, major civil engineering contractors, builders' merchants and the larger ready-mix concrete companies, servicing major construction projects, such as the Channel Tunnel and London Underground's Jubilee Line Extension.

4.3.7 Case 7: FoodCo's Potato Sourcing

FoodCo's potato sourcing supply chain is shown in Figure 4.7. The single-source grower supplies FoodCo with potatoes of a particular size and shape that are compatible with the latter's specialised processing equipment. In order to achieve this uniformity, FoodCo cultivates the seeds and supplies them to the potato grower. Downstream FoodCo provide ready meals to an up-market retail supermarket, whose business represents 70% of their turnover.

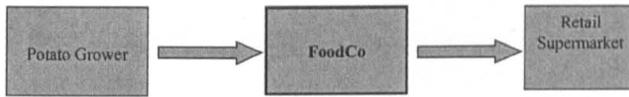


Figure 4.7: Case 7 - FoodCo's Potato Sourcing Supply Chain

4.3.8 Case 8: FoodCo's Carton & Sleeve Packaging Sourcing

FoodCo's carton & sleeve packaging sourcing supply chain is shown in Figure 4.8.

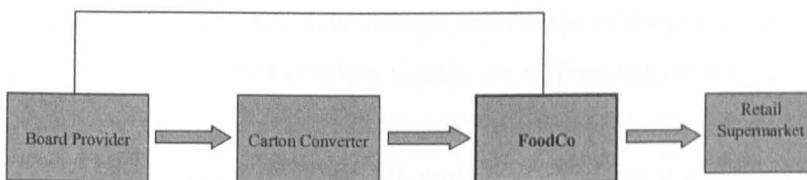


FIGURE 4.8: Case 8 - FoodCo's Carton & Sleeve Packaging Sourcing Supply Chain

FoodCo operated a single source strategy with the carton converter, but the supplier became complacent and less competitive. For this reason, FoodCo decided to deal directly with a board producer as well. They identified a relatively small board producer,

which was keen to build its business, and developed it. The discount that would normally go to the carton converter is now achieved by FoodCo, who has an agreement with the carton converter that board will always be sourced from this preferred supplier.

4.3.9 Case 9: BlendCo's Energy Sourcing

Figure 4.9 shows BlendCo's energy sourcing supply chain.

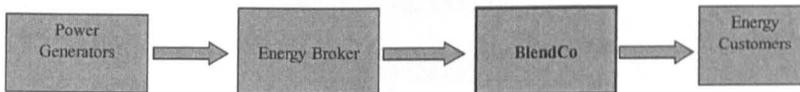


FIGURE 4.9: Case 9 - BlendCo's Energy Sourcing Supply Chain

Energy is a very simple commodity bought on the basis of kilowatt per hour. BlendCo buys energy from a broker, who takes a percentage of the price that BlendCo pays for its energy. The existing broker offers significant differentiation which is unique to BlendCo and therefore represents a major competitive advantage. For this reason, BlendCo is not able to divulge the nature of the differentiation, although it is related to technology.

Upstream there are very few mainstream power generators. Downstream, although BlendCo consumes much of the energy for its own use, it also sells some of it to other companies, hence the inclusion of the customer stage in this analysis.

At the moment BlendCo buys energy from a broker, but future plans entail obtaining a supply license, which will enable it to bypass both the broker and the generator, thereby controlling the whole supply chain and overcoming the powerful position of the power generators.

4.3.10 Case 10: ExtractCo's Life of Field Seismic Imaging Sourcing

ExtractCo's life-of-field seismic imaging sourcing supply chain is shown in Figure 4.10. The currency amounts indicate the approximate value of the contracts at each stage. ExtractCo has a direct relationship with all the suppliers in the supply chain.

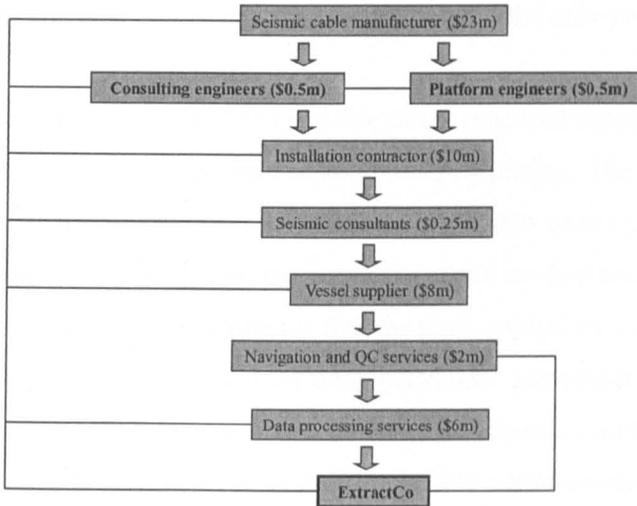


FIGURE 4.10: Case 10 - ExtractCo's Life of Field Seismic Imaging Sourcing Supply Chain

Seismic imaging is a technique that is used to identify the structure and properties of rocks that are located on the seabed. An explosive device on the surface generates energy waves that are reflected back from the rocks. Little recording devices in the water or on the ground receive the reflected signals and, through various data processing tools and techniques, map the rocks' structures. The technology is not quite advanced enough to categorically ascertain whether oil or gas is present, but so-called hydrocarbon indicators can be identified: for example, seals which may have trapped the oil or gas could be identified. The strength of the reflection and the amplitude of the reflected wave can be analysed in order to make assertions about what may be present. Seismic imaging, therefore, is a combination of mapping the structure of rocks and looking for hydrocarbon indicators. It is usually carried out as part of an exploration exercise, with pilot wells being drilled in potential locations to check for oil and gas after seismic imaging has taken place.

Life-of-field seismic imaging is concerned with monitoring changes in the oil or gas reservoir once a producing field has been established. It involves shooting seismic every

three months for the life of the field on an on-going basis. The current view in the industry is that the most cost effective and technically superior way of producing oil and gas is to permanently install the receivers into the oil field and carry out this continual monitoring process for the life of the field, usually about seven to eight years. The life-of-field seismic imaging project was first conceived in 2000. It is the first time that this has been done anywhere in the world and it is the only project of its kind.

ExtractCo went out to tender to five or six potential suppliers to provide a whole range of services for the life-of-field seismic imaging project. The idea was to use a first-tier supplier who would be responsible for all aspects of the project, such as the design, manufacture, installation and operation of the sea-bed array, including acquiring and processing data. Any elements that the main contractor could not provide directly were to be sub-contracted out to third-party providers. The tender document stipulated that the first-tier supplier must provide details of all the sub-contractors, the relationships they needed to build and the reasons for selecting particular companies. ExtractCo retained the right to evaluate or reject sub-contractors, but this was not exercised, the first-tier supplier choosing the lower-level providers.

Since there was a great deal of uncertainty over the installation costs, ExtractCo chose to exclude this element from the scope of work when evaluating the tenders. A contract was eventually awarded to a supplier to undertake all the other activities. Not long after the contract was awarded, one of the companies which had been acting as a sub-contractor in the project took over the first-tier supplier and consequently assumed responsibility for the contract. This company had actually tendered for the whole project, but had been unsuccessful and, furthermore, decided to undertake a lot of the work that was due to be carried out by other sub-contractors. There was an immediate conflict of interest which started to cause problems and ExtractCo had to intervene. It negotiated an exit from the contract with the new owner and entered into a direct arrangement with one of the sub-contractors for the design and manufacture of the array.

Other additional services were needed to deliver the project and ExtractCo eventually entered into relationships with eight different companies in the supply chain.

4.3.11 Case 11: IndirectCo's Accounts Payable Sourcing

IndirectCo's accounts payable sourcing supply chain is shown in Figure 4.11.

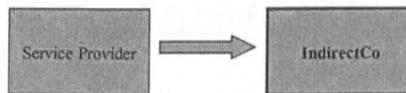


FIGURE 4.11: Case 11 - IndirectCo's Accounts Payable Sourcing Supply Chain

The accounts payable function was outsourced some time ago to an external service provider. The original contract was signed with a large, global company with substantial expertise in the provision of outsourced services as well as consultancy work. However, they had a large market share and a diverse customer portfolio, with IndirectCo's contract constituting only a small part of their business. This led them to be in a dominant position and reluctant to work with IndirectCo in pursuing continuous value improvements. Furthermore, the market was rapidly stagnating as competition was closed out by this powerful supplier.

IndirectCo therefore made a decision to develop an alternative supplier, which had less expertise and a smaller market share as an outsourced service provider than the incumbent, but a fine reputation in consultancy work. IndirectCo's resources were channelled into developing the processes and systems of this alternative source. However, the new supplier has recently been taken over by a large technology-led company whose margins in this area are a lot less than other parts of their business, thus raising a question mark over its future commitment to outsourced service provision.

The accounts payable activity may be seen as a nuisance to the new owners, in which case they may sell it off. Alternatively, it may persevere and try to develop its expertise in this area given the increased demand for such services or, finally, it may be used in a loss-leading capacity as a vehicle to sell other more valuable services to incumbent customers. Although this element of uncertainty exists, the case study analysis reflects the current relationship between supplier and customer and assumes that the former will continue to be committed to the arrangement.

4.3.12 Case 12: IndirectCo's High Level Legal Services Sourcing

IndirectCo's high-level legal services supply chain is shown in Figure 4.12.

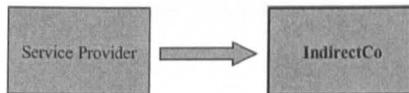


FIGURE 4.12: Case 12 - IndirectCo's High Level Legal Services Sourcing Supply Chain

Typical examples of this type of work are mergers and acquisitions or major litigation. The characteristics of the high-level legal services supply chain are very different to that associated with the low-level work discussed in Section 4.3.4.

High-level legal services are not driven by the competitive market. The service providers must have a proven track record of delivery for the corporation sustained over a number of years and in addition must have a high status and profile in the external environment. There may be a few suppliers with the right level of expertise to deal with certain legal matters, but only one who is trusted enough and would drop everything to ensure that the best people were put on the case. This service cannot be commoditised.

4.4.1 FoodCo's Financial Performance

In order to assess FoodCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.1, 4.2 and 4.3, with a summary in Table 4.4.

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|-----------------------------|-------------|-------------|-------------|--------------|-------------|
| FoodCo | 124,743 (3) | 124,471 (3) | 113,121 (3) | 94,921 (5) | 86,443 (6) |
| Bakemark | 110,609 (4) | 88,162 (5) | 85,062 (7) | 97,095 (4) | 95,574 (4) |
| Hazlewood Convenience Foods | 78,883 (8) | 70,663 (9) | 60,622 (10) | 93,563 (6) | 102,687 (3) |
| Headland Foods | 59,873 (11) | 61,921 (11) | 99,909 (6) | *64,751 (10) | *64,751 (9) |
| Kelloggs GB | 127,611 (2) | 127,208 (2) | 126,816 (2) | 118,817 (2) | 118,391 (2) |
| Keystone Distribution | 109,102 (5) | 108,530 (4) | 106,144 (5) | 102,058 (3) | 91,376 (5) |
| Marlow Foods | 77,636 (9) | 75,213 (6) | 76,778 (9) | 71,510 (8) | 58,424 (10) |
| Recordline | 81,934 (7) | 72,144 (8) | 48,841 (11) | 40,890 (11) | 40,018 (11) |
| Schwans Consumer Brands | 82,655 (6) | 73,485 (7) | 106,755 (4) | *74,741 (7) | *74,741 (7) |
| Whitworths | 63,487 (10) | 69,645 (10) | 78,935 (8) | *66,182 (9) | *66,182 (8) |
| William Jackson & Sons | 206,720 (1) | 193,291 (1) | 171,745 (1) | 159,073 (1) | 191,302 (1) |

Key: £thousands

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.1: FoodCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|-----------------------------|------------|------------|-------------|-------------|-------------|
| FoodCo | 2,324 (8) | 3,728 (4) | -4,724 (11) | -1,220 (10) | -1,698 (9) |
| Bakemark | 2,624 (7) | 1,105 (7) | 2,800 (5) | 465 (7) | -205 (6) |
| Hazlewood Convenience Foods | 4,844 (4) | 3,519 (5) | 2,774 (6) | -4,632 (11) | -7,123 (11) |
| Headland Foods | -616 (10) | 718 (8) | -3,695 (10) | *-1,010 (9) | *-1,010 (8) |
| Kelloggs GB | 10,135 (1) | 251 (10) | 5,154 (3) | 14,033 (1) | -1,813 (10) |
| Keystone Distribution | 5,445 (3) | 5,535 (2) | 5,750 (2) | 5,145 (2) | -254 (7) |
| Marlow Foods | 3,535 (6) | 23,034 (1) | 3,532 (4) | 4,561 (3) | 1,139 (3) |
| Recordline | -624 (11) | 594 (9) | 1,045 (8) | 563 (6) | 947 (4) |
| Schwans Consumer Brands | 3,997 (5) | 1,755 (6) | 8,043 (1) | *-174 (8) | *-174 (5) |
| Whitworths | 733 (9) | 132 (11) | -567 (9) | *2,312 (4) | *2,312 (2) |
| William Jackson & Sons | 6,332 (2) | 5,383 (3) | 1,926 (7) | 1,610 (5) | 4,287 (1) |

Key: £thousands

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.2: FoodCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|-----------------------------|-------------|------------|-------------|--------------|-------------|
| FoodCo | 1.86% (8) | 3% (4) | -4.18% (11) | -1.29% (9) | -1.96% (10) |
| Bakemark | 2.37% (7) | 1.25% (7) | 3.29% (6) | 0.48% (7) | -0.21% (5) |
| Hazlewood Convenience Foods | 6.14% (2) | 4.98% (3) | 4.58% (4) | -4.95% (11) | -6.94% (11) |
| Headland Foods | -1.03% (11) | 1.16% (8) | -3.7% (10) | *-1.47% (10) | *-1.47% (8) |
| Kelloggs | 7.94% (1) | 0.2% (10) | 4.06% (5) | 11.81% (1) | -1.53% (9) |
| Keystone Distribution | 4.99% (3) | 5.1% (2) | 5.42% (2) | 5.04% (3) | -0.28% (6) |
| Marlow Foods | 4.55% (5) | 30.63% (1) | 4.6% (3) | 6.38% (2) | 1.95% (4) |
| Recordline | -0.76% (10) | 0.82% (9) | 2.14% (7) | 1.38% (5) | 2.37% (2) |
| Schwans Consumer Brands | 4.84% (4) | 2.39% (6) | 7.53% (1) | *-0.43% (8) | *-0.43% (7) |
| Whitworths | 1.15% (9) | 0.19% (11) | -0.72% (9) | *3.2% (4) | *3.2% (1) |
| William Jackson & Sons | 3.06% (6) | 2.78% (5) | 1.12% (8) | 1.01% (6) | 2.24% (3) |

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.3: FoodCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Revenue/turnover | £124.7m (Quartile 2) | £124.5m (Quartile 2) | £113.1m (Quartile 2) | £94.9m (Quartile 2) | £86.4m (Quartile 3) |
| Profit before tax | £2.32m (Quartile 3) | £3.73m (Quartile 2) | £-4.72m (Quartile 4) | £-1.22m (Quartile 4) | £-1.70m (Quartile 4) |
| Profit margin | 1.86% (Quartile 3) | 3% (Quartile 2) | -4.18% (Quartile 4) | -1.29% (Quartile 4) | -1.96% (Quartile 4) |

Quartile figures in brackets denote performance in relation to peer group.
Quartiles 1 & 2 = above average performance.
Quartiles 3 & 4 = below average performance

TABLE 4.4: Summary of FoodCo's Financial Performance Measures

Although FoodCo grew over the five year period in terms of revenue, its profitability was consistently in the third or fourth quartiles in relation to its competitors (i.e. below average). Furthermore, the company actually made a loss in three of the five years under consideration. This demonstrates that *FoodCo's activities were not achieving sustainable competitive advantage.*

4.4.2 BlendCo's Financial Performance

In order to assess BlendCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.5, 4.6 and 4.7, with a summary in Table 4.8.

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|--------------------|---------------|---------------|---------------|---------------|---------------|
| BlendCo | 773,200 (3) | 738,200 (3) | 687,800 (3) | 688,400 (3) | 690,700 (3) |
| Imperial Sugar | 54,942 (5) | 9,068 (5) | *48,730 (5) | *48,730 (5) | *48,730 (5) |
| Napier Brown | 166,529 (4) | 153,326 (4) | 161,758 (4) | 168,937 (4) | 183,043 (4) |
| Sugar Distributors | 997,863 (2) | 1,025,771 (1) | 1,121,184 (2) | 1,117,406 (2) | 1,045,380 (2) |
| Tate & Lyle | 1,081,300 (1) | 1,025,000 (2) | 1,277,700 (1) | 1,147,300 (1) | 1,499,300 (1) |

Key: \$thousands

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group
There is a limited peer group for this industry sector

TABLE 4.5: BlendCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| BlendCo | 169,600 (1) | 173,200 (1) | 153,900 (1) | 132,000 (1) | 98,500 (2) |
| Imperial Sugar | 7,402 (3) | 2,144 (4) | *3,363 (5) | *3,363 (3) | *3,363 (4) |
| Napier Brown | 4,956 (4) | 5,572 (3) | 3,417 (4) | 3,132 (4) | 5,086 (3) |
| Sugar Distributors | -4,054 (5) | -27,600 (5) | 7,268 (3) | 1,292 (5) | -2,295 (5) |
| Tate & Lyle | 66,800 (2) | 70,200 (2) | 65,700 (2) | 51,200 (2) | 112,200 (1) |

Key: \$thousands

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group
There is a limited peer group for this industry sector

TABLE 4.6: BlendCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|--------------------|------------|------------|-------------|-------------|-------------|
| BlendCo | 21.93% (1) | 23.46% (2) | 22.38% (1) | 19.17% (1) | 14.26% (1) |
| Imperial Sugar | 13.47% (2) | 23.64% (1) | *12.71% (2) | *12.71% (2) | *12.71% (2) |
| Napier Brown | 2.98% (4) | 3.63% (4) | 2.11% (4) | 1.85% (4) | 2.78% (4) |
| Sugar Distributors | -0.41% (5) | 2.69% (5) | 0.65% (5) | 0.12% (5) | -0.29% (5) |
| Tate & Lyle | 6.18% (3) | 6.85% (3) | 5.14% (3) | 4.46% (3) | 7.48% (3) |

Figures marked * refer to measures that have been averaged over a number of years
Numbers in brackets refer to the rank position in relation to peer group
There is a limited peer group for this industry sector

TABLE 4.7: BlendCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Revenue/turnover | £773.2m (Quartile 3) | £738.2m (Quartile 3) | £687.8m (Quartile 3) | £688.4m (Quartile 3) | £690.7m (Quartile 3) |
| Profit before tax | £169.6m (Quartile 1) | £173.2m (Quartile 1) | £153.9m (Quartile 1) | £132m (Quartile 1) | £98.5m (Quartile 2) |
| Profit margin | 21.93% (Quartile 1) | 23.46% (Quartile 2) | 22.38% (Quartile 1) | 19.17% (Quartile 1) | 14.26% (Quartile 1) |

Quartile figures in brackets denote performance in relation to peer group.
Quartiles 1 & 2 = above average performance.
Quartiles 3 & 4 = below average performance.

TABLE 4.8: Summary of BlendCo's Financial Performance Measures

BlendCo's profitability increased over the five year period and its profit margins were consistently in the first quartile in relation to its competitors (i.e. above average). This demonstrates that *BlendCo's activities were achieving sustainable competitive advantage.*

4.4.3 ExtractCo's Financial Performance

In order to assess ExtractCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.9, 4.10 and 4.11, with a summary in Table 4.12.

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|
| ExtractCo | 2,778,000 (1) | 2,292,000 (1) | 2,482,000 (1) | 2,926,000 (1) | 3,040,000 (2) |
| Petroleum | 1,752,028 (4) | 1,281,562 (6) | 1,028,609 (6) | 1,087,590 (5) | 1,196,028 (6) |
| BG International | 823,196 (8) | 746,555 (9) | 1,004,603 (7) | 787,991 (10) | 958,966 (7) |
| Britoil | 792,779 (9) | 820,228 (8) | 981,513 (8) | 1,001,923 (7) | 1,407,772 (3) |
| Conoco-Phillips Petroleum | 2,043,764 (3) | 1,475,013 (3) | 916,941 (9) | 967,287 (8) | 1,404,725 (4) |
| ENI | 1,431,493 (5) | 1,416,819 (5) | 1,374,792 (3) | 1,172,594 (4) | 551,003 (10) |
| Esso E&P | 2,424,300 (2) | 2,069,900 (2) | 2,197,300 (2) | 2,898,500 (2) | 3,398,000 (1) |
| Flogas | 1,382,385 (6) | 1,455,977 (4) | 1,157,006 (4) | 1,060,941 (6) | 1,373,190 (5) |
| Hess | 757,852 (10) | 741,312 (10) | 864,713 (10) | 952,408 (9) | 958,869 (8) |
| Hydrocarbon Resources | 1,268,611 (7) | 1,070,120 (7) | 1,075,274 (5) | 1,209,880 (3) | 894,253 (9) |
| Total E&P UK | 578,561 (11) | 533,442 (11) | 483,646 (11) | 492,885 (11) | 521,345 (11) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.9: ExtractCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|
| ExtractCo | 2,424,000 (1) | 1,630,000 (1) | 1,408,000 (1) | 2,022,000 (1) | 1,852,000 (1) |
| Petroleum | 1,078 (11) | -105 (11) | 34,616 (11) | -7,563 (11) | -19,428 (11) |
| BG International | 629,246 (4) | 339,298 (6) | 214,095 (7) | 737,784 (4) | 225,752 (7) |
| Britoil | 458,441 (5) | 497,105 (4) | 551,882 (4) | 519,032 (5) | 692,965 (3) |
| Conoco-Phillips Petroleum | 205,262 (8) | 136,841 (9) | 127,208 (9) | 94,033 (9) | 148,144 (9) |
| ENI | 309,431 (7) | 433,295 (5) | 206,018 (8) | 195,957 (8) | 197,057 (8) |
| Esso E&P | 1,055,600 (2) | 947,700 (2) | 825,400 (2) | 1,171,500 (2) | 1,281,900 (2) |
| Flogas | 66,376 (10) | 67,154 (10) | 55,693 (10) | 51,059 (10) | 61,816 (10) |
| Hess | 401,354 (6) | 303,736 (7) | 297,986 (5) | 386,828 (6) | 445,707 (5) |
| Hydrocarbon Resources | 830,205 (3) | 711,596 (3) | 688,094 (3) | 831,430 (3) | 490,170 (4) |
| Total E&P UK | 202,681 (9) | 187,947 (8) | 256,483 (6) | 234,432 (7) | 227,188 (6) |

Key: £thousands

Numbers in brackets refer to the rank positions in relation to peer group

TABLE 4.10: ExtractCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------------|------------|-------------|------------|------------|-------------|
| ExtractCo | 87.26% (1) | 71.12% (1) | 56.73% (2) | 69.1% (2) | 60.93% (1) |
| Petroleum | 0.06% (11) | -0.01% (11) | 3.37% (11) | -0.7% (11) | -1.62% (11) |
| BG International | 76.44% (2) | 45.45% (5) | 21.31% (7) | 93.63% (1) | 23.54% (8) |
| Britoil | 57.83% (4) | 60.61% (3) | 56.23% (3) | 51.8% (4) | 49.22% (3) |
| Conoco-Phillips Petroleum | 10.04% (9) | 9.28% (9) | 13.87% (9) | 9.72% (9) | 10.55% (9) |
| ENI | 21.62% (8) | 30.58% (8) | 14.99% (8) | 16.71% (8) | 35.76% (7) |
| Esso E&P | 43.54% (6) | 45.78% (4) | 37.56% (5) | 40.42% (7) | 37.73% (6) |
| Flogas | 4.8% (10) | 4.61% (10) | 4.81% (10) | 4.81% (10) | 4.57% (10) |
| Hess | 52.96% (5) | 40.97% (6) | 34.46% (6) | 40.62% (6) | 46.48% (4) |
| Hydrocarbon Resources | 65.44% (3) | 66.5% (2) | 63.99% (1) | 68.72% (3) | 54.81% (2) |
| Total E&P UK | 35.03% (7) | 35.23% (7) | 53.03% (4) | 47.56% (5) | 43.58% (5) |

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.11: ExtractCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Revenue/turnover | £2.78bn (Quartile 1) | £2.29bn (Quartile 1) | £2.48bn (Quartile 1) | £2.93bn (Quartile 1) | £3.04bn (Quartile 1) |
| Profit before tax | £2.42bn (Quartile 1) | £1.63bn (Quartile 1) | £1.41bn (Quartile 1) | £2.02bn (Quartile 1) | £1.85bn (Quartile 1) |
| Profit margin | 87.26% (Quartile 1) | 71.12% (Quartile 1) | 56.73% (Quartile 1) | 69.1% (Quartile 1) | 60.93% (Quartile 1) |

Quartile figures in brackets denote performance in relation to peer group.
 Quartiles 1 & 2 = above average performance.
 Quartiles 3 & 4 = below average performance.

TABLE 4.12: Summary of ExtractCo's Financial Performance Measures

ExtractCo is one of the leading players in its industry. Profitability generally increased over the five year period and its profit margins were without fail in the first quartile in relation to its competitors (i.e. above average). This demonstrates that *ExtractCo's activities were achieving sustainable competitive advantage.*

4.4.4 IndirectCo's Financial Performance

In order to assess IndirectCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.13, 4.14 and 4.15, with a summary in Table 4.16. The information is based on the parent company, since IndirectCo is responsible for the corporate planning and support services for all of its divisions.

| | 2004 | 2003 | 2002 | 2001 | 2000 |
|--------------------|-----------------|-----------------|-----------------|-----------------|----------------|
| IndirectCo | 152,618,000 (1) | 129,921,000 (1) | 111,589,000 (1) | 120,867,000 (1) | 98,054,000 (1) |
| Castrol | 85,028 (11) | 80,961 (11) | 76,603 (11) | 72,959 (11) | 70,717 (11) |
| Chevron | 8,442,140 (2) | 7,563,498 (3) | 7,446,507 (2) | 7,164,782 (2) | 7,749,142 (2) |
| Esso | 334,143 (8) | 304,551 (8) | 291,088 (9) | 258,538 (9) | 285,249 (8) |
| Exxon-Mobil Marine | 847,553 (4) | 897,417 (5) | 650,259 (5) | 426,327 (6) | 214,160 (9) |
| Hunting | 1,255,100 (3) | 1,195,400 (4) | 951,300 (4) | 1,035,300 (3) | 1,215,900 (3) |
| Lubricants | 202,958 (9) | 293,173 (9) | 312,597 (8) | 331,742 (7) | 338,539 (7) |
| Murco Petroleum | 525,820 (6) | 410,501 (7) | 328,099 (7) | 310,364 (8) | 366,399 (6) |
| Petrochem Carless | 154,379 (10) | 148,838 (10) | 145,538 (10) | 163,899 (10) | 109,291 (10) |
| Petroplus Refining | 490,264 (7) | 434,361 (6) | 512,963 (6) | 674,482 (4) | 827,457 (4) |
| Texaco | 703,199 (5) | 7,596,969 (2) | 4,844,993 (3) | 456,245 (5) | 478,625 (5) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.13: IndirectCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|--------------------|----------------|---------------|---------------|---------------|----------------|
| IndirectCo | 12,979,000 (1) | 9,167,000 (1) | 7,033,000 (1) | 9,088,000 (1) | 11,215,000 (1) |
| Castrol | -20,857 (10) | 76,586 (2) | 69,419 (2) | -89,288 (11) | -9,650 (10) |
| Chevron | 188,082 (2) | -13,814 (9) | 22,653 (3) | -49,751 (9) | 123,038 (2) |
| Esso | -693 (7) | 10,376 (4) | 15,740 (5) | 14,034 (3) | 12,209 (6) |
| Exxon-Mobil Marine | -3,148 (9) | -426 (7) | -3,052 (11) | 700 (7) | 3,178 (9) |
| Hunting | 15,400 (4) | 21,100 (3) | 19,100 (4) | 65,000 (2) | 33,400 (3) |
| Lubricants | -32,185 (11) | -83,324 (11) | -1,995 (10) | -87,470 (10) | -91,231 (11) |
| Murco Petroleum | 32,921 (3) | 9,603 (5) | 4,505 (8) | 7,989 (4) | 26,478 (4) |
| Petrochem Carless | 1,447 (5) | -2,066 (8) | -1,297 (9) | -3,098 (8) | 3,683 (7) |
| Petroplus Refining | 1,028 (6) | 3,021 (6) | 4,694 (7) | 2,734 (6) | 13,484 (5) |
| Texaco | -3,141 (8) | -14,153 (10) | 14,739 (6) | 6,757 (5) | 3,275 (8) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.14: IndirectCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|--------------------|--------------|--------------|-------------|--------------|--------------|
| IndirectCo | 8.5% (1) | 7.06% (2) | 6.3% (2) | 7.52% (1) | 11.44% (1) |
| Castrol | -24.53% (11) | 94.6% (1) | 90.62% (1) | -122% (11) | -13.65% (10) |
| Chevron | 2.23% (3) | -0.18% (8) | 0.3% (=7) | -0.69% (8) | 1.59% (7) |
| Esso | -0.21% (7) | 3.41% (3) | 5.41% (3) | 5.43% (3) | 4.28% (3) |
| Exxon-Mobil Marine | -0.37% (8) | -0.05% (7) | -0.47% (9) | 0.16% (7) | 1.48% (8) |
| Hunting | 1.23% (4) | 1.77% (5) | 2.01% (4) | 6.28% (2) | 2.75% (5) |
| Lubricants | -15.86% (10) | -28.42% (11) | -0.64% (10) | -26.37% (10) | -26.95% (11) |
| Murco Petroleum | 6.07% (2) | 2.34% (4) | 1.37% (5) | 2.57% (4) | 7.23% (2) |
| Petrochem Carless | 0.94% (5) | -1.39% (10) | -0.89% (11) | -1.89% (9) | 3.37% (4) |
| Petroplus Refining | 0.21% (6) | 0.7% (6) | 0.92% (6) | 0.41% (6) | 1.63% (6) |
| Texaco | -0.45% (9) | -0.19% (9) | 0.3% (=7) | 1.48% (5) | 0.68% (9) |

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.15: IndirectCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Revenue/turnover | £152.6bn (Quartile 1) | £129.9bn (Quartile 1) | £111.6bn (Quartile 1) | £120.9bn (Quartile 1) | £98.1bn (Quartile 1) |
| Profit before tax | £12.98bn (Quartile 1) | £9.17bn (Quartile 1) | £7.03bn (Quartile 1) | £9.09bn (Quartile 1) | £11.22bn (Quartile 1) |
| Profit margin | 8.5% (Quartile 1) | 7.06% (Quartile 1) | 6.3% (Quartile 1) | 7.52% (Quartile 1) | 11.44% (Quartile 1) |

Quartile figures in brackets denote performance in relation to peer group.
 Quartiles 1 & 2 = above average performance.
 Quartiles 3 & 4 = below average performance.

TABLE 4.16: Summary of IndirectCo's Financial Performance Measures

IndirectCo is one of the leading players in the industry. Although profitability fluctuated over the five year period, its profit margins were consistently in the first quartile in relation to its competitors (i.e. above average). This demonstrates that *IndirectCo's activities were achieving sustainable competitive advantage.*

4.4.5 MechCo's Financial Performance

In order to assess MechCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.17, 4.18 and 4.19, with a summary in Table 4.20.

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|------------------------|---------------|---------------|--------------|---------------|---------------|
| MechCo | 383,213 (3) | 347,419 (3) | 354,616 (4) | 329,971 (4) | 295,692 (3) |
| Countryside Properties | 330,071 (5) | 386,114 (2) | 437,764 (3) | 387,621 (3) | 281,740 (4) |
| Doosan Babcock Energy | 306,212 (7) | 260,409 (7) | 334,673 (5) | 288,434 (6) | 260,001 (6) |
| Galliford Try | 327,369 (6) | 249,677 (8) | 254,322 (7) | 258,548 (7) | 198,404 (8) |
| Jarvis | 1,076,100 (1) | 1,105,500 (1) | 904,696 (1) | 698,823 (2) | 650,203 (2) |
| John Laing | 250,100 (10) | 248,500 (9) | 559,300 (2) | 1,095,300 (1) | 1,311,700 (1) |
| Lovell Partnerships | 364,307 (4) | 278,814 (5) | 223,558 (9) | 155,971 (9) | 107,709 (9) |
| May Gurney | 238,276 (11) | 239,364 (10) | 206,192 (10) | 89,115 (10) | 80,371 (10) |
| Norwest Holst | 295,536 (8) | 266,363 (6) | 246,582 (8) | 220,092 (8) | 259,062 (7) |
| Volker Wessels | 279,944 (9) | 107,312 (11) | 62,172 (11) | 51,698 (11) | 44,705 (11) |
| Wilmot | 410,393 (2) | 331,627 (4) | 314,585 (6) | 302,173 (5) | 275,031 (6) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.17: MechCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2004 | 2003 | 2002 | 2001 |
|------------------------|---------------|--------------|--------------|--------------|------------|
| MechCo | 3,698 (9) | -11,352 (11) | -2,975 (10) | 5,957 (5) | 4,405 (6) |
| Countryside Properties | 16,071 (2) | 36,056 (2) | 34,313 (2) | 30,352 (1) | 24,178 (2) |
| Doosan Babcock Energy | 5,121 (7) | 2,628 (8) | 451 (9) | 7,046 (4) | 12,725 (3) |
| Galliford Try | 2,968 (10) | -3,560 (10) | 3,925 (7) | 3,676 (8) | 2,066 (9) |
| Jarvis | -256,000 (11) | 62,700 (1) | 45,829 (1) | 24,789 (2) | 31,606 (1) |
| John Laing | 25,100 (1) | 21,200 (3) | -18,600 (11) | -24,700 (11) | 5,700 (5) |
| Lovell Partnerships | 12,627 (3) | 7,156 (5) | 4,745 (6) | 3,269 (9) | 1,726 (10) |
| May Gurney | 11,561 (4) | 8,807 (4) | 8,038 (4) | 1,260 (10) | 202 (11) |
| Norwest Holst | 10,383 (5) | 4,700 (7) | 11,385 (3) | 10,397 (3) | 11,799 (4) |
| Volker Wessels | 4,290 (8) | -3,446 (9) | 1,917 (8) | 4,846 (6) | 2,898 (8) |
| Wilmot | 10,087 (6) | 6,381 (6) | 4,772 (5) | 4,235 (7) | 3,783 (7) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.18: MechCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|------------------------|--------------|-------------|-------------|-------------|------------|
| MechCo | 0.96% (9) | -3.27% (11) | -0.84% (10) | 1.81% (7) | 1.49% (7) |
| Countryside Properties | 4.87% (2) | 9.34% (1) | 7.84% (1) | 7.83% (2) | 8.58% (1) |
| Doosan Babcock Energy | 1.67% (7) | 1.01% (8) | 0.13% (9) | 2.44% (5) | 4.89% (3) |
| Galliford Try | 0.91% (10) | -1.43% (9) | 1.54% (7) | 1.42% (8) | 1.04% (9) |
| Jarvis | -23.79% (11) | 5.67% (3) | 5.07% (2) | 3.55% (4) | 4.86% (4) |
| John Laing | 10.04% (1) | 8.53% (2) | -3.33% (11) | -2.26% (11) | 0.43% (10) |
| Lovell Partnerships | 3.47% (5) | 2.57% (5) | 2.12% (6) | 2.1% (6) | 1.6% (6) |
| May Gurney | 3.7% (3) | 3.36% (4) | 2.58% (5) | 1.41% (9) | 0.25% (11) |
| Norwest Holst | 3.51% (4) | 1.76% (7) | 4.62% (3) | 4.72% (3) | 4.55% (5) |
| Volker Wessels | 1.53% (8) | -3.21% (10) | 3.08% (4) | 9.37% (1) | 6.48% (2) |
| Wilmot | 2.46% (6) | 1.92% (6) | 1.52% (8) | 1.4% (10) | 1.38% (8) |

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.19: MechCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | 2006 | 2005 | 2004 | 2003 | 2002 |
|---------------------|-------------------------|--------------------------|-------------------------|------------------------|-------------------------|
| Revenue/turnover | £383.2m (Quartile 2) | £347.4m (Quartile 2) | £354.6m (Quartile 2) | £329m (Quartile 2) | £295.7m (Quartile 2) |
| Profit before tax | £3.70m (Quartile 4) | £-11.35m (Quartile 4) | £-2.98m (Quartile 4) | £5.96m (Quartile 2) | £4.41m (Quartile 3) |
| Profit margin | 0.96% (Quartile 4) | -3.27% (Quartile 4) | -0.84% (Quartile 4) | 1.81% (Quartile 3) | 1.49% (Quartile 3) |

Quartile figures in brackets denote performance in relation to peer group.

Quartiles 1 & 2 = above average performance.

Quartiles 3 & 4 = below average performance.

TABLE 4.20: Summary of MechCo's Financial Performance Measures

MechCo's profit margins fluctuated over the five year period but were consistently in the third or fourth quartile in relation to its competitors (i.e. below average). Furthermore, the company actually made a loss in two of the five years under consideration. This indicates that *MechCo's activities were not achieving sustainable competitive advantage.*

4.4.6 PrimeCo's Financial Performance

In order to assess PrimeCo's performance in relation to its peer group, financial information on revenue/turnover, profit before tax, and profit margin are shown in Tables 4.21, 4.22 and 4.23, with a summary in Table 4.24. The information is based on the four participating members of the consortium (Companies A, B, C and D) and their peer group.

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|----------------|----------------|----------------|---------------|---------------|---------------|
| Company A | 4,657,500 (1) | 4,422,800 (1) | 3,212,600 (1) | 3,462,500 (1) | 3,195,900 (1) |
| Company B | 1,898,300 (5) | 1,846,500 (6) | 1,709,300 (6) | 1,534,700 (5) | 1,401,700 (5) |
| Company C | 1,870,000 (7) | 1,860,900 (5) | 1,847,300 (4) | 1,698,800 (4) | 1,681,000 (3) |
| Company D | 931,000 (12) | 868,500 (12) | 768,309 (11) | 859,680 (10) | 839,530 (8) |
| Barratt Homes | 1,878,803 (6) | 1,685,263 (7) | 1,410,582 (7) | 1,207,275 (8) | 1,146,258 (6) |
| Bellway | 1,092,571 (11) | 954,197 (11) | 772,964 (12) | 695,720 (12) | 634,301 (12) |
| George Wimpey | 3,005,700 (3) | 2,878,500 (2) | 2,600,100 (2) | 1,895,100 (3) | 1,702,000 (2) |
| Kier | 1,444,100 (8) | 1,417,700 (8) | 1,369,400 (8) | 1,232,400 (7) | 1,026,500 (7) |
| Morgan Sindall | 1,219,297 (10) | 1,137,537 (10) | 1,038,387 (9) | 909,168 (9) | 654,836 (11) |
| Persimmon | 2,131,300 (4) | 1,883,000 (4) | 1,711,100 (5) | 1,477,467 (6) | 742,164 (9) |
| Taylor Woodrow | 3,358,600 (2) | 2,669,400 (3) | 2,208,600 (3) | 2,138,400 (2) | 1,539,700 (4) |
| Wilson Bowden | 1,282,300 (9) | 1,165,800 (9) | 983,900 (10) | 789,500 (11) | 726,800 (10) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.21: PrimeCo's Peer Group Performance (Turnover/Revenue)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|----------------|-------------|-------------|-------------|-------------|-------------|
| Company A | 65,700 (8) | 95,700 (7) | 39,200 (9) | 80,700 (7) | 81,800 (7) |
| Company B | 160,800 (7) | 65,600 (8) | 70,700 (7) | 34,000 (10) | 22,500 (9) |
| Company C | -6,400 (12) | 23,800 (11) | 42,200 (8) | 35,000 (9) | 13,000 (12) |
| Company D | 3,000 (11) | 30,600 (10) | 21,699 (11) | 43,798 (8) | 60,180 (8) |
| Barratt Homes | 303,796 (4) | 229,438 (4) | 174,727 (5) | 140,195 (4) | 122,503 (3) |
| Bellway | 205,530 (6) | 169,251 (6) | 125,344 (6) | 101,455 (6) | 89,145 (6) |
| George Wimpey | 450,700 (2) | 378,200 (1) | 285,900 (1) | 152,000 (3) | 146,100 (2) |
| Kier | 40,600 (9) | 33,300 (9) | 28,000 (10) | 21,900 (11) | 17,700 (10) |
| Morgan Sindall | 27,940 (10) | 20,920 (12) | 15,530 (12) | 20,770 (12) | 15,360 (11) |
| Persimmon | 459,600 (1) | 341,700 (2) | 256,800 (2) | 166,737 (2) | 104,016 (5) |
| Taylor Woodrow | 390,400 (3) | 304,000 (3) | 233,100 (3) | 202,300 (1) | 201,500 (1) |
| Wilson Bowden | 257,800 (5) | 223,300 (5) | 178,800 (4) | 139,200 (5) | 120,700 (4) |

Key: £thousands

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.22: PrimeCo's Peer Group Performance (Profit Before Tax)

Source: FAME on-line database (2007)

| | 2006 | 2005 | 2004 | 2003 | 2002 |
|----------------|-------------|------------|------------|------------|------------|
| Company A | 1.41% (10) | 2.16% (10) | 1.22% (12) | 2.33% (8) | 2.56% (8) |
| Company B | 8.47% (7) | 3.55% (7) | 4.14% (7) | 2.22% (10) | 1.61% (11) |
| Company C | -0.34% (12) | 1.28% (12) | 2.28% (9) | 2.06% (11) | 0.77% (12) |
| Company D | 0.32% (11) | 3.52% (8) | 2.82% (8) | 5.09% (7) | 7.17% (7) |
| Barratt Homes | 16.17% (4) | 13.61% (4) | 12.39% (4) | 11.61% (3) | 10.69% (5) |
| Bellway | 18.81% (3) | 17.74% (3) | 16.22% (2) | 14.58% (2) | 14.05% (2) |
| George Wimpey | 14.99% (5) | 13.14% (5) | 11% (5) | 8.02% (6) | 8.58% (6) |
| Kier | 2.81% (8) | 2.35% (9) | 2.04% (10) | 1.78% (12) | 1.72% (10) |
| Morgan Sindall | 2.29% (9) | 1.84% (11) | 1.5% (11) | 2.28% (9) | 2.35% (9) |
| Persimmon | 21.56% (1) | 18.15% (2) | 15.01% (3) | 11.29% (4) | 14.02% (3) |
| Taylor Woodrow | 11.62% (6) | 11.39% (6) | 10.55% (6) | 9.46% (5) | 13.09% (4) |
| Wilson Bowden | 20.1% (2) | 19.15% (1) | 18.17% (1) | 17.63% (1) | 16.61% (1) |

Numbers in brackets refer to the rank position in relation to peer group

TABLE 4.23: PrimeCo's Peer Group Performance (Profit Margin)

Source: FAME on-line database (2007)

| PERFORMANCE MEASURE | COMPANY | 2006 | 2005 | 2004 | 2003 | 2002 |
|----------------------|---------|-------------|-------------|-------------|-------------|-------------|
| Revenue/ turnover | A | £4.66bn (1) | £4.42bn (1) | £3.21bn (1) | £3.46bn (1) | £3.2bn (1) |
| | B | £1.9bn (2) | £1.85bn (2) | £1.71bn (2) | £1.53bn (2) | £1.4bn (2) |
| | C | £1.87bn (3) | £1.86bn (2) | £1.85bn (2) | £1.7bn (2) | £1.68bn (1) |
| | D | £931m (4) | £868.5m (4) | £768.3m (4) | £859.7m (4) | £839.5m (3) |
| Profit before tax | A | £65.7m (3) | £95.7m (3) | £39.2m (3) | £80.7m (3) | £81.8m (3) |
| | B | £160.8m (3) | £65.6m (3) | £70.7m (3) | £34.0m (4) | £22.5m (3) |
| | C | £-6.4m (4) | £23.8m (4) | £42.2m (3) | £35.0m (3) | £13.0m (4) |
| | D | £3.0m (4) | £30.6m (4) | £21.7m (4) | £43.8m (3) | £60.2m (3) |
| Profit margin | A | 1.41% (4) | 2.16% (4) | 1.22% (4) | 2.33% (3) | 2.56% (3) |
| | B | 8.47% (3) | 3.55% (3) | 4.14% (3) | 2.22% (4) | 1.61% (4) |
| | C | -0.34% (4) | 1.28% (4) | 2.28% (3) | 2.06% (4) | 0.77% (4) |
| | D | 0.32% (4) | 3.52% (3) | 2.82% (3) | 5.09% (3) | 7.17% (3) |

Figures in brackets denote quartile performance in relation to peer group.

Quartiles 1 & 2 = above average performance

Quartiles 3 & 4 = below average performance.

TABLE 4.24: Summary of PrimeCo's Financial Performance Measures

None of the consortium members demonstrated above average performance during the five year period. Profitability was without fail in the third and fourth quartiles in relation to their peer group. This demonstrates that *PrimeCo's activities were not achieving sustainable competitive advantage.*

4.5.1 Case 1 Sourcing Strategy

BlendCo's chemicals sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.25.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Low. | E-procurement ordering system. No other operational linkages. |
| Cooperative norms. | Low. | None. BlendCo is willing to work collaboratively, but the suppliers are not committed. |
| Relationship-specific adaptations | Low | Some chemical requirements are consolidated with intermediary suppliers. |

TABLE 4.25: Integrating Factors for BlendCo's Chemicals Sourcing Strategy

BlendCo tenders on an annual basis for its chemicals requirements, selecting products from offerings made by suppliers currently operating in the market. An arms-length relationship exists between BlendCo and the chemicals supplier, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. BlendCo's role is limited to market analysis, supplier selection and performance monitoring of the first-tier supplier (usually an intermediary) only. This indicates that a *supplier selection* sourcing strategy exists.

4.5.2 Case 2 Sourcing Strategy

ExtractCo's drilling mud sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.26.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|---|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Low. | The well services supplier monitors and adjusts the quality of drilling mud on site as part of the contract specification. No other operational linkages. |
| Cooperative norms. | Low. | None. Arms-length relationships. |
| Relationship-specific adaptations | Low | None. |

TABLE 4.26: Integrating Factors for ExtractCo's Drilling Mud Sourcing Strategy

ExtractCo is now able to select the substitute for the key ingredient from offerings made by up-stream suppliers currently operating in the market. Although the well services provider monitors and adjusts the quality of the drilling mud on site as part of the contract specification, there is an arms-length relationship between ExtractCo and the supplier, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. ExtractCo's role is limited to market analysis, supplier selection and performance monitoring. However, ExtractCo now understands the structure of the supply chain and the opportunities for leverage beyond the first-tier supplier and is able to source the substitute product from a second-tier provider. This suggests that a *supply chain sourcing* strategy exists.

4.5.3 Case 3 Sourcing Strategy

IndirectCo’s facilities management sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.27.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|---------|--|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Medium. | Joint monitoring of service-level agreements. Facilities management supplier is responsible for equipment maintenance. |
| Cooperative norms. | Low. | None. Arms-length relationships. |
| Relationship-specific adaptations | Low | None. |

TABLE 4.27: Integrating Factors for IndirectCo’s Facilities Management Sourcing Strategy

IndirectCo is able to select individual services from offerings made by up-stream suppliers currently operating in the market. Although there are some operational linkages involved, an arms-length relationship exists between IndirectCo and the suppliers, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. IndirectCo's role is limited to market analysis, supplier selection and performance monitoring. However, IndirectCo now understands the structure of the supply chain and the opportunities for leverage beyond the first-tier supplier and is able to source the individual services from second-tier providers. This suggests that a *supply chain sourcing* strategy exists.

4.5.4 Case 4 Sourcing Strategy

IndirectCo's low-level legal services sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.28.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Low. | None. Operational activities are not closely linked. |
| Cooperative norms. | Low. | None. Arms-length relationships. |
| Relationship-specific adaptations | Low | None. |

TABLE 4.28: Integrating Factors for IndirectCo's Low Level Legal Services Sourcing Strategy

IndirectCo selects low-level legal services work from offerings made by suppliers currently operating in the market. An arms-length relationship exists between IndirectCo and the suppliers, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. IndirectCo's role is limited to market analysis, supplier selection and performance monitoring of the first-tier suppliers only. This indicates that a *supplier selection* sourcing strategy exists.

4.5.5 Case 5 Sourcing Strategy

MechCo’s mechanical & electrical components sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.29.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Low. | E-procurement ordering system. No other operational linkages |
| Cooperative norms. | Low. | None. Arms-length relationships. |
| Relationship-specific adaptations | Low | None. |

TABLE 4.29: Integrating Factors for MechCo’s Mechanical & Electrical Components Sourcing Strategy

MechCo selects mechanical & electrical components from offerings made by suppliers currently operating in the market. An arms-length relationship exists between MechCo and the suppliers, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. MechCo's role is limited to market analysis, supplier selection and performance monitoring of the immediate suppliers only. This indicates that a *supplier selection* sourcing strategy exists.

4.5.6 Case 6 Sourcing Strategy

PrimeCo's ready-mixed concrete sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.30.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | Low. | None. Contractual information exchange only |
| Operational linkages. | Low. | Joint project review meetings. No other operational linkages. |
| Cooperative norms. | Low. | None. Arms-length relationships. |
| Relationship-specific adaptations | Low | None. |

TABLE 4.30: Integrating Factors for PrimeCo's Ready Mixed Concrete Sourcing Strategy

PrimeCo selects ready-mixed concrete from offerings made by suppliers currently operating in the market. Although there are joint project review meetings, an arms-length relationship exists between PrimeCo and the supplier, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. PrimeCo's role is limited to market analysis, supplier selection and performance monitoring of the immediate supplier only. This indicates that a *supplier selection* sourcing strategy exists.

4.5.7 Case 7 Sourcing Strategy

FoodCo’s potato sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.31.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|---|
| Product/ process information exchange. | High. | Sharing of cost information, joint product development, joint demand forecasting, and joint efficiency initiatives. |
| Operational linkages. | High. | Operational activities are closely linked. E-procurement ordering and replenishment systems, just-in-time delivery, and joint quality assurance. |
| Cooperative norms. | High. | Single source supplier. Commitment to work collaboratively, relationship manager, client account manager, regular meetings. |
| Relationship-specific adaptations | High. | FoodCo has developed dedicated processing equipment. The potato supplier has developed specific products. Joint investments in research and technology. |

TABLE 4.31: Integrating Factors for FoodCo’s Potato Sourcing Strategy

After initially analysing the market and selecting a suitable potato grower, FoodCo now works on a continuous basis with this supplier. There are high levels of collaboration and integration between FoodCo and the supplier, consisting of product and process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supplier development*.

4.5.8 Case 8 Sourcing Strategy

FoodCo’s carton & sleeve packaging sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.32.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | High. | Sharing of cost information, joint product development, joint demand forecasting, and joint efficiency initiatives. |
| Operational linkages. | High. | Operational activities are closely linked. E-procurement ordering and replenishment systems, just-in-time delivery, and joint quality assurance. |
| Cooperative norms. | High. | Single source suppliers. Commitment to be flexible and responsive, relationship manager, client account manager, regular meetings. |
| Relationship-specific adaptations | High. | FoodCo has made dedicated investments in the board supplier. The suppliers have assigned capacity to FoodCo. |

TABLE 4.32: Integrating Factors for FoodCo’s Carton & Sleeve Packaging Sourcing Strategy

After initially analyzing the market and selecting a suitable carton converter and board producer, FoodCo now works on a continuous basis with both these suppliers operating at the second- and third-tier levels of the supply chain. There are high levels of collaboration and integration between FoodCo and the suppliers, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supply chain management*.

4.5.9 Case 9 Sourcing Strategy

BlendCo’s energy sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.33.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | High. | Joint product development, joint demand forecasting, and joint cost and functionality improvement initiatives. |
| Operational linkages. | High. | Operational activities are closely linked, with a continuous supply of inputs provided. |
| Cooperative norms. | High. | BlendCo requires the energy broker’s scarce expertise in new market. Commitment to work collaboratively, relationship manager, client account manager. |
| Relationship-specific adaptations | High. | The energy broker has developed a specific technology solution for BlendCo. BlendCo has made dedicated investments in this solution. |

TABLE 4.33: Integrating Factors for BlendCo’s Energy Sourcing Strategy

After initially analysing the market and selecting a suitable energy broker, BlendCo now works on a continuous basis with this supplier. There are high levels of collaboration and integration between BlendCo and the supplier, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supplier development*.

4.5.10 Case 10 Sourcing Strategy

ExtractCo’s life-of-field seismic imaging sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.34.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|---------|--|
| Product/ process information exchange. | High. | Sharing of cost information, joint product development, joint demand forecasting, and joint efficiency initiatives. |
| Operational linkages. | Medium. | Operational activities are fully integrated within the requirements of the one-off project only. |
| Cooperative norms. | High. | Single source suppliers for the project. Commitment to work collaboratively, dedicated project managers, and regular meetings. |
| Relationship-specific adaptations | High. | ExtractCo and all the suppliers have made dedicated investments in terms of research and product development. |

TABLE 4.34: Integrating Factors for ExtractCo’s Life of Field Seismic Imaging Sourcing Strategy

The original contract entailed ExtractCo selecting a prime contractor from suppliers currently operating in the market, with its role limited to market analysis, supplier selection and performance monitoring of the first-tier supplier (the prime contractor) only. This had the characteristics of a supplier selection approach.

The revised sourcing arrangement is very different. ExtractCo, after initially analyzing the market and selecting suppliers, now works on a continuous basis with all the suppliers at every stage of the supply chain. There are high levels of collaboration and integration between ExtractCo and all the suppliers in the supply chain, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supply chain management*.

4.5.11 Case 11 Sourcing Strategy

IndirectCo's accounts payable sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.35.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|---|
| Product/ process information exchange. | High. | Sharing of cost information, joint product development, joint demand forecasting, and joint efficiency initiatives. |
| Operational linkages. | High. | Operational activities are fully integrated. The supplier offers a full accounts payable solution within IndirectCo's organisation. Joint service-level monitoring. |
| Cooperative norms. | High. | Long-term contract. Commitment to work collaboratively, relationship manager, client account manager, regular meetings. |
| Relationship-specific adaptations | High. | IndirectCo has made dedicated investments in the supplier in terms of systems, processes and technology. The supplier has developed a specific service provision. |

TABLE 4.35: Integrating Factors for IndirectCo's Accounts Payable Sourcing Strategy

After initially analysing the market and selecting a suitable service provider, IndirectCo now works on a continuous basis with this supplier. There are high levels of collaboration and integration between IndirectCo and the supplier, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supplier development*.

4.5.12 Case 12 Sourcing Strategy

IndirectCo's high-level legal services sourcing strategy was analysed in terms of the degree of collaboration and integration that exists and the basis of the collaboration and integration (whether first-tier or supply chain). This enabled the identification of the generic sourcing strategy being deployed. The integrating factors are summarised in Table 4.36.

| INTEGRATING FACTORS | LEVEL | EXAMPLES |
|--|-------|--|
| Product/ process information exchange. | High. | Significant sharing of high-level, corporate information which has a direct affect on the profitability and reputation of both buyer and suppliers. |
| Operational linkages. | High. | Operational activities are fully integrated. Most high-level legal work is outsourced to key suppliers. Law firms' staff embedded in IndirectCo. Relationship managers. Joint planning meetings. |
| Cooperative norms. | High. | Limited number of suppliers with the requisite level of expertise. Recognition of mutual interest. Guaranteed work in return for commitment and responsiveness. |
| Relationship-specific adaptations | High. | The suppliers provide designated lawyers to the IndirectCo account. IndirectCo markets joint service provision to client organisations and governments. |

TABLE 4.36: Integrating Factors for IndirectCo's High Level Legal Services Sourcing Strategy

After initially analysing the market and selecting a suitable service provider, IndirectCo now works on a continuous basis with this supplier. There are high levels of collaboration and integration between IndirectCo and the supplier, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations. The sourcing strategy adopted therefore conforms to the definition of *supplier development*.

4.6.1 Case 1 Advantage Generating Potential

In order to assess the advantage-generating potential of BlendCo’s chemicals sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.37). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.38).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 1a | 1b | 1c | 1d | 1e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | False | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.37: Case 1 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 0 | 9 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 0% | |

TABLE 4.38: Case 1 Advantage Generating Potential

An *advantage-generating score of 0%* is achieved. This indicates that the approach used for sourcing chemicals does not achieve sustainable competitive advantage.

4.6.2 Case 2 Advantage Generating Potential

In order to assess the advantage-generating potential of ExtractCo’s drilling mud sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.39). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.40).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 2a | 2b | 2c | 2d | 2e | Mode |
| Test 1 | False | False | False | False | True | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | True | True | True | True | True | True |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.39: Case 2 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True | 1 | 0 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 1 | 8 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 11% | |

TABLE 4.40: Case 2 Advantage Generating Potential

It can be seen that an *advantage-generating score of 11%* is achieved. This indicates that the approach used for sourcing drilling mud does not achieve sustainable competitive advantage.

4.6.3 Case 3 Advantage Generating Potential

In order to assess the advantage-generating potential of IndirectCo's facilities management sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.41). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.42).

| Interviewee | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| | 3a | 3b | 3c | 3d | 3e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | True | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.41: Case 3 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 0 | 9 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 0% | |

TABLE 4.42: Case 3 Advantage Generating Potential

An *advantage-generating score of 0%* is achieved. This indicates that the approach used for sourcing facilities management does not achieve sustainable competitive advantage.

4.6.4 Case 4 Advantage Generating Potential

In order to assess the advantage-generating potential of IndirectCo’s low-level legal services sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.43). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.44).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 4a | 4b | 4c | 4d | 4e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | False | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.43: Case 4 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 0 | 9 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | | 0% |

TABLE 4.44: Case 4 Advantage Generating Potential

An *advantage-generating score of 0%* is achieved. This indicates that the approach used for sourcing facilities management does not achieve sustainable competitive advantage.

4.6.5 Case 5 Advantage Generating Potential

In order to assess the advantage-generating potential of MechCo’s mechanical & electrical components sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.45). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.46).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 5a | 5b | 5c | 5d | 5e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | False | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.45: Case 5 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 0 | 9 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | | 0% |

TABLE 4.46: Case 5 Advantage Generating Potential

An *advantage-generating score of 0%* is achieved. This indicates that the approach used for sourcing M&E components does not achieve sustainable competitive advantage.

4.6.6 Case 6 Advantage Generating Potential

In order to assess the advantage-generating potential of PrimeCo's ready-mixed concrete sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.47). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.48).

| Interviewee | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| | 6a | 6b | 6c | 6d | 6e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | False | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.47: Case 6 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 0 | 9 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | | 0% |

TABLE 4.48: Case 6 Advantage Generating Potential

An *advantage-generating score of 0%* is achieved. This indicates that the approach used for sourcing ready-mixed concrete does not achieve sustainable competitive advantage.

4.6.7 Case 7 Advantage Generating Potential

In order to assess the advantage-generating potential of FoodCo’s potato sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.49). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.50).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 7a | 7b | 7c | 7d | 7e | Mode |
| Test 1 | True | True | True | True | True | True |
| Test 2 | True | True | True | True | True | True |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | True | True | True | True | True | True |
| Test 6 | True | True | True | True | True | True |
| Test 7 | T/F | T/F | T/F | T/F | T/F | T/F |
| Test 8 | False | False | False | False | False | False |
| Test 9 | True | True | True | True | True | True |

TABLE 4.49: Case 7 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | True | 1 | 0 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | True | 1 | 0 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | True | 1 | 0 |
| (6) The value of the sourcing strategy will not deteriorate quickly | True | 1 | 0 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True/False | 0.5 | 0.5 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | True | 1 | 0 |
| TOTALS | | 5.5 | 3.5 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 61% | |

TABLE 4.50: Case 7 Advantage Generating Potential

An advantage-generating score of 61% is achieved. This indicates that the approach used for sourcing potatoes does achieve sustainable competitive advantage.

4.6.8 Case 8 Advantage Generating Potential

In order to assess the advantage-generating potential of FoodCo's carton & sleeve packaging sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.51). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.52).

| Interviewee | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| | 8a | 8b | 8c | 8d | 8e | Mode |
| Test 1 | True | True | True | True | True | True |
| Test 2 | False | False | False | False | False | False |
| Test 3 | True | True | True | True | True | True |
| Test 4 | False | False | False | False | False | False |
| Test 5 | False | False | False | False | False | False |
| Test 6 | False | False | False | False | False | False |
| Test 7 | True | True | True | True | True | True |
| Test 8 | False | False | False | False | False | False |
| Test 9 | True | True | True | True | False | True |

TABLE 4.51: Case 8 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | True | 1 | 0 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | True | 1 | 0 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | False | 0 | 1 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True | 1 | 0 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | True | 1 | 0 |
| TOTALS | | 4 | 5 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 44% | |

TABLE 4.52: Case 8 Advantage Generating Potential

An *advantage-generating score of 44%* is achieved. This indicates that the approach used for sourcing carton & sleeve packaging does not achieve sustainable competitive advantage.

4.6.9 Case 9 Advantage Generating Potential

In order to assess the advantage-generating potential of BlendCo’s energy sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.53). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.54).

| Interviewee | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| | 9a | 9b | 9c | 9d | 9e | Mode |
| Test 1 | True | True | True | True | True | True |
| Test 2 | True | True | True | True | True | True |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | True | True | True | True | True | True |
| Test 6 | True | True | True | True | True | True |
| Test 7 | True | True | True | True | True | True |
| Test 8 | True | True | True | True | False | True |
| Test 9 | True | True | True | True | True | True |

TABLE 4.53: Case 9 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy unique in relation to competitors | True | 1 | 0 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | True | 1 | 0 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | True | 1 | 0 |
| (6) The value of the sourcing strategy will not deteriorate quickly | True | 1 | 0 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True | 1 | 0 |
| (8) The sourcing strategy cannot be substituted by alternatives | True | 1 | 0 |
| (9) The sourcing strategy is superior to that of competitors | True | 1 | 0 |
| TOTALS | | 7 | 2 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 78% | |

TABLE 4.54: Case 9 Advantage Generating Potential

An *advantage-generating score of 78%* is achieved. This indicates that the approach used for sourcing energy does achieve sustainable competitive advantage.

4.6.10 Case 10 Advantage Generating Potential

In order to assess the advantage-generating potential of ExtractCo’s life of field seismic imaging sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.55). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.56).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 10a | 10b | 10c | 10d | 10e | Mode |
| Test 1 | False | True | True | True | True | True |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | True | True | True | True | True | True |
| Test 6 | False | True | True | True | True | True |
| Test 7 | False | True | True | True | True | True |
| Test 8 | False | True | True | True | True | True |
| Test 9 | False | False | False | False | False | False |

TABLE 4.55: Case 10 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | True | 1 | 0 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | True | 1 | 0 |
| (6) The value of the sourcing strategy will not deteriorate quickly | True | 1 | 0 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True | 1 | 0 |
| (8) The sourcing strategy cannot be substituted by alternatives | True | 1 | 0 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 5 | 4 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 56% | |

TABLE 4.56: Case 10 Advantage Generating Potential

An *advantage-generating score of 56%* is achieved. This indicates that the approach used for sourcing life of field seismic imaging does achieve sustainable competitive advantage.

4.6.11 Case 11 Advantage Generating Potential

In order to assess the advantage-generating potential of IndirectCo's accounts payable sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.57). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.58).

| Interviewee | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| | 11a | 11b | 11c | 11d | 11e | Mode |
| Test 1 | False | False | False | False | False | False |
| Test 2 | False | False | False | False | False | False |
| Test 3 | False | False | False | False | False | False |
| Test 4 | False | False | False | False | False | False |
| Test 5 | True | True | True | True | True | True |
| Test 6 | False | False | False | False | False | False |
| Test 7 | False | False | False | False | False | False |
| Test 8 | False | False | False | False | False | False |
| Test 9 | False | False | False | False | False | False |

TABLE 4.57: Case 11 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | False | 0 | 1 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | False | 0 | 1 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | False | 0 | 1 |
| (4) Competitors would not know how to recreate the sourcing strategy | False | 0 | 1 |
| (5) Large investments have been made in the sourcing strategy | True | 1 | 0 |
| (6) The value of the sourcing strategy will not deteriorate quickly | False | 0 | 1 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | False | 0 | 1 |
| (8) The sourcing strategy cannot be substituted by alternatives | False | 0 | 1 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 1 | 8 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | | 11% |

TABLE 4.58: Case 11 Advantage Generating Potential

An *advantage-generating score of 11%* is achieved. This indicates that the approach used for sourcing accounts payable does not achieve sustainable competitive advantage.

4.6.12 Case 12 Advantage Generating Potential

In order to assess the advantage-generating potential of IndirectCo’s high-level legal services sourcing strategy, responses from the five interviewees were recorded in relation to the nine advantage-generating tests (Table 4.59). The mode responses were then binarised and summated in order to identify an advantage-generating score (Table 4.60).

| | Interviewee | | | | | |
|--------|-------------|-------|-------|-------|-------|-------|
| | 12a | 12b | 12c | 12d | 12e | Mode |
| Test 1 | True | True | True | True | True | True |
| Test 2 | True | True | True | True | True | True |
| Test 3 | True | False | False | False | False | False |
| Test 4 | True | False | False | False | False | False |
| Test 5 | True | True | True | True | True | True |
| Test 6 | True | True | True | True | True | True |
| Test 7 | True | T/F | T/F | T/F | T/F | T/F |
| Test 8 | True | True | True | True | True | True |
| Test 9 | True | False | False | False | False | False |

TABLE 4.59: Case 12 Advantage Generating Tests Interviewee Responses

| THE TESTS | MODE RESPONSE | POSITIVE SCORE (P) | NEGATIVE SCORE (N) |
|---|---------------|--------------------|--------------------|
| (1) The sourcing strategy is unique in relation to competitors | True | 1 | 0 |
| (2) The sourcing strategy has a uniqueness created over time through its development process | True | 1 | 0 |
| (3) Competitors would be unable to identify the value of the sourcing strategy | True | 1 | 0 |
| (4) Competitors would not know how to recreate the sourcing strategy | True | 1 | 0 |
| (5) Large investments have been made in the sourcing strategy | True | 1 | 0 |
| (6) The value of the sourcing strategy will not deteriorate quickly | True | 1 | 0 |
| (7) The value of the sourcing strategy can be appropriated by the buyer and does not need to be passed on to suppliers or customers | True/False | 0.5 | 0.5 |
| (8) The sourcing strategy cannot be substituted by alternatives | True | 1 | 0 |
| (9) The sourcing strategy is superior to that of competitors | False | 0 | 1 |
| TOTALS | | 7.5 | 1.5 |
| ADVANTAGE GENERATING SCORE (P/9x100) | | 83% | |

TABLE 4.60: Case 12 Advantage Generating Potential

An *advantage-generating score of 83%* is achieved. This indicates that the approach used for sourcing high-level legal services does achieve sustainable competitive advantage.

4.7.1 Case 1 Power Analysis

In order to assess the power structure of BlendCo’s chemicals sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 1a | 1b | 1c | 1d | 1e | |
| Element B1 | 25 | 25 | 20 | 20 | 25 | 23 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 90 | 90 | 85 | 85 | 90 | 88 |
| Element S3 | 65 | 65 | 60 | 60 | 65 | 63 |

TABLE 4.61: Case 1 Power Analysis (BlendCo/Intermediate Producer Dyad) - Interviewee Responses

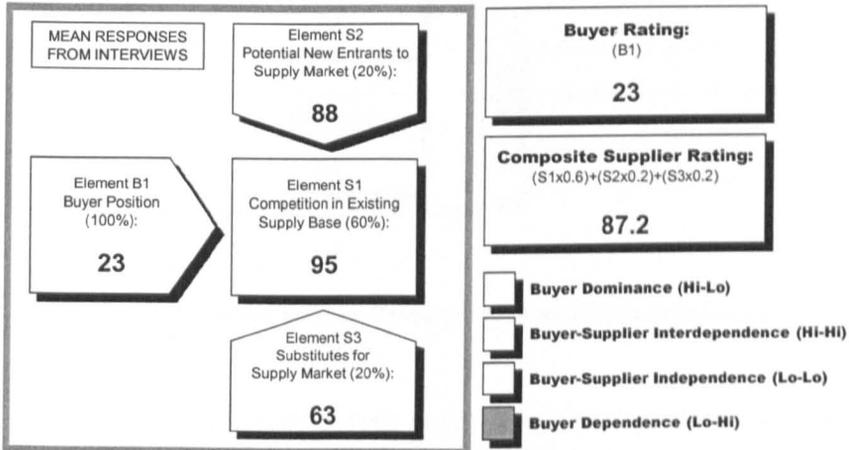


Figure 4.13: Case 1 Power Analysis (BlendCo/Intermediate Producer Dyad) - Summary

| | Interviewee | | | | | |
|------------|-------------|----|----|----|----|------|
| | 1a | 1b | 1c | 1d | 1e | Mean |
| Element B1 | 80 | 80 | 80 | 80 | 80 | 80 |
| Element S1 | 85 | 85 | 85 | 85 | 85 | 85 |
| Element S2 | 90 | 90 | 85 | 85 | 90 | 88 |
| Element S3 | 65 | 65 | 60 | 60 | 65 | 63 |

TABLE 4.62: Case 1 Power Analysis (Intermediate Producer/Raw Producer Dyad) - Interviewee Responses

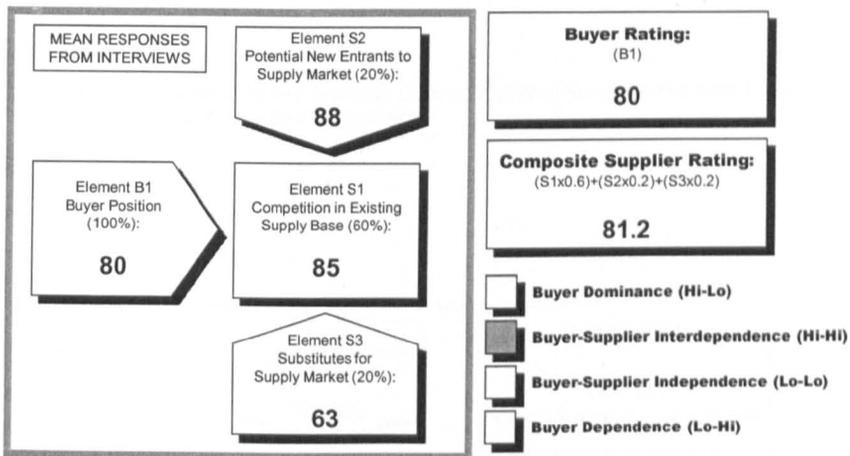


Figure 4.14: Case 1 Power Analysis (Intermediate Producer/Raw Producer Dyad) - Summary

The power analysis shows that both *buyer dependence* and *interdependence* relationships exist within the chemicals sourcing supply chain.

4.7.2 Case 2 Power Analysis

In order to assess the power structure of ExtractCo’s drilling mud sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 2a | 2b | 2c | 2d | 2e | Mean |
| Element B1 | 10 | 10 | 10 | 10 | 10 | 10 |
| Element S1 | 85 | 85 | 85 | 85 | 85 | 85 |
| Element S2 | 55 | 60 | 60 | 55 | 60 | 58 |
| Element S3 | 85 | 90 | 90 | 85 | 90 | 88 |

Before supply chain sourcing strategy was deployed

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 2a | 2b | 2c | 2d | 2e | Mean |
| Element B1 | 85 | 85 | 85 | 80 | 90 | 85 |
| Element S1 | 40 | 50 | 45 | 45 | 45 | 45 |
| Element S2 | 55 | 60 | 60 | 55 | 60 | 58 |
| Element S3 | 30 | 35 | 35 | 30 | 35 | 33 |

After supply chain sourcing strategy was deployed

TABLE 4.63: Case 2 Power Analysis (ExtractCo/Well Services Provider Dyad) - Interviewee Responses

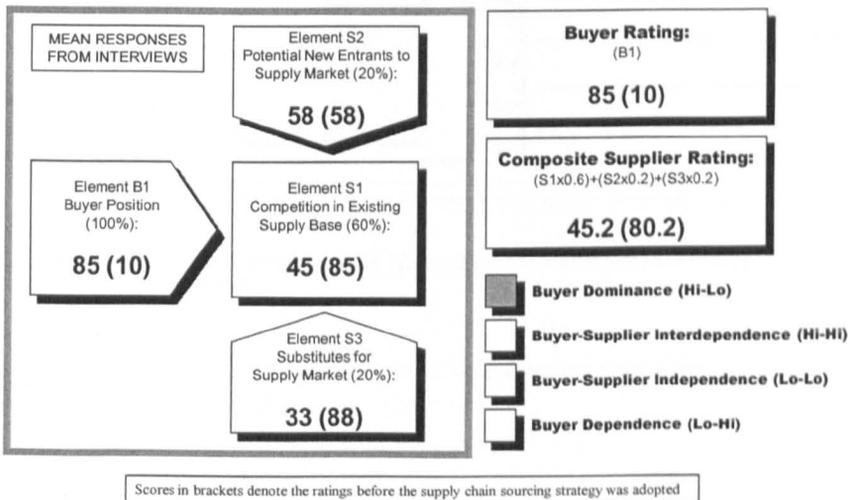


Figure 4.15: Case 2 Power Analysis (ExtractCo/Well Services Provider Dyad) - Summary

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 2a | 2b | 2c | 2d | 2e | Mean |
| Element B1 | 10 | 10 | 10 | 10 | 10 | 10 |
| Element S1 | 85 | 85 | 85 | 85 | 85 | 85 |
| Element S2 | 50 | 50 | 50 | 55 | 45 | 50 |
| Element S3 | 85 | 90 | 90 | 85 | 90 | 88 |

Before supply chain sourcing strategy was deployed

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 2a | 2b | 2c | 2d | 2e | Mean |
| Element B1 | 85 | 85 | 85 | 80 | 90 | 85 |
| Element S1 | 40 | 50 | 45 | 45 | 45 | 45 |
| Element S2 | 50 | 50 | 50 | 55 | 45 | 50 |
| Element S3 | 30 | 35 | 35 | 30 | 35 | 33 |

After supply chain sourcing strategy was deployed

TABLE 4.64: Case 2 Power Analysis (ExtractCo/Chemical Supplier Dyad) - Interviewee Responses

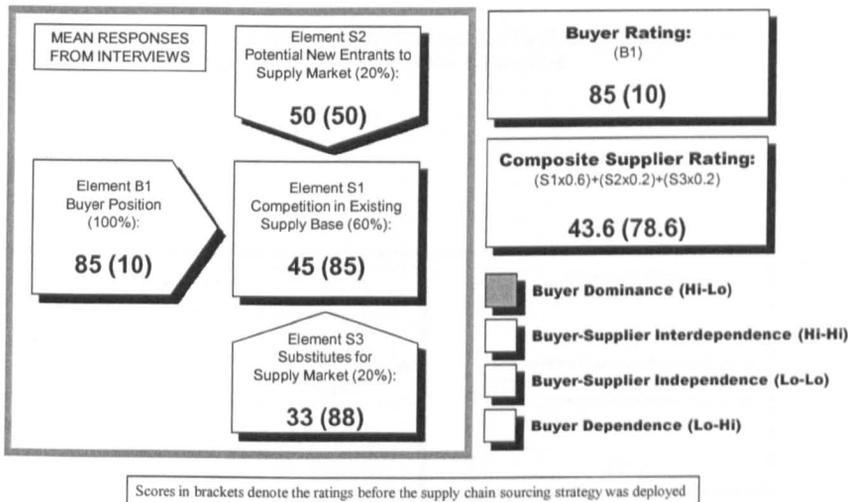


Figure 4.16: Case 2 Power Analysis (ExtractCo/Chemical Supplier Dyad) - Summary

The power analysis shows that *buyer dominance* relationships exist within the drilling mud sourcing supply chain.

4.7.3 Case 3 Power Analysis

In order to assess the power structure of IndirectCo’s facilities management sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 3a | 3b | 3c | 3d | 3e | |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 40 | 45 | 45 | 45 | 50 | 45 |
| Element S2 | 35 | 40 | 35 | 40 | 40 | 38 |
| Element S3 | 35 | 40 | 35 | 40 | 40 | 38 |

TABLE 4.65: Case 3 Power Analysis (IndirectCo/Facilities Management Company Dyad) - Interviewee Responses

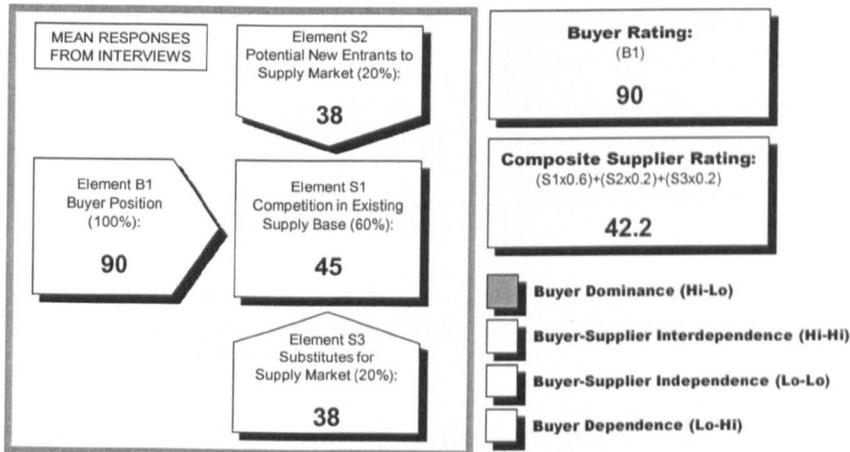


Figure 4.17: Case 3 Power Analysis (IndirectCo/Facilities Management Company Dyad) - Summary

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 3a | 3b | 3c | 3d | 3e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 15 | 15 | 15 | 15 | 15 | 15 |
| Element S2 | 10 | 15 | 10 | 15 | 10 | 12 |
| Element S3 | 35 | 40 | 35 | 40 | 40 | 38 |

TABLE 4.66: Case 3 Power Analysis (IndirectCo/Service Providers Dyad) - Interviewee Responses

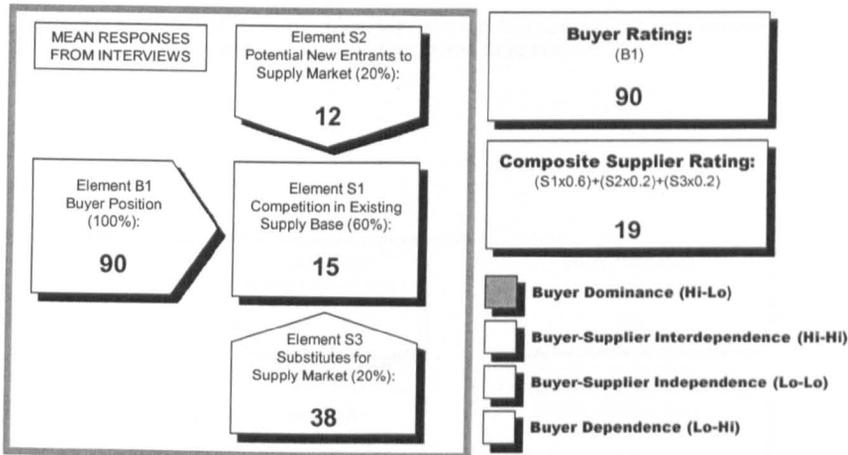


Figure 4.18: Case 3 Power Analysis (IndirectCo/Service Providers Dyad) - Summary

The power analysis shows that *buyer dominance* relationships exist within the facilities management sourcing supply chain.

4.7.4 Case 4 Power Analysis

In order to assess the power structure of IndirectCo’s low-level legal services sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 4a | 4b | 4c | 4d | 4e | |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 5 | 15 | 10 | 10 | 10 | 10 |
| Element S2 | 10 | 10 | 15 | 15 | 10 | 12 |
| Element S3 | 35 | 35 | 40 | 40 | 40 | 38 |

TABLE 4.67: Case 4 Power Analysis (IndirectCo/Low Level Legal Services Provider Dyad) - Interviewee Responses

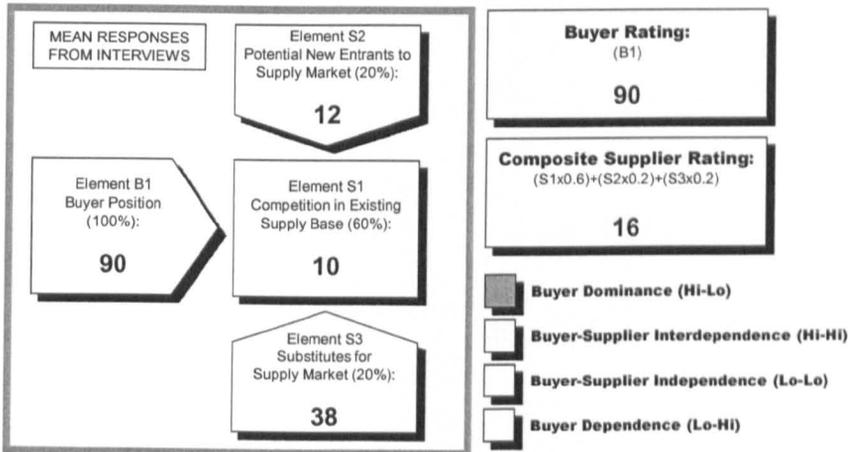


Figure 4.19: Case 4 Power Analysis (IndirectCo/Low Level Legal Services Provider Dyad) - Summary

The power analysis shows that a *buyer dominance* relationship exists within the low-level legal services sourcing supply chain.

4.7.5 Case 5 Power Analysis

In order to assess the power structure of MechCo’s mechanical & electrical components sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 5a | 5b | 5c | 5d | 5e | |
| Element B1 | 70 | 70 | 70 | 70 | 70 | 70 |
| Element S1 | 70 | 70 | 70 | 70 | 70 | 70 |
| Element S2 | 85 | 85 | 80 | 85 | 80 | 83 |
| Element S3 | 85 | 85 | 80 | 85 | 80 | 83 |

TABLE 4.68: Case 5 Power Analysis (Client/Prime Contractor Dyad) - Interviewee Responses

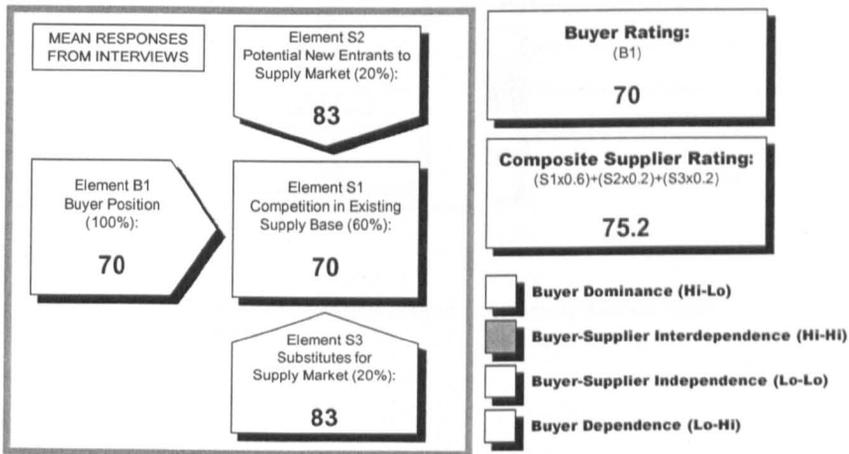
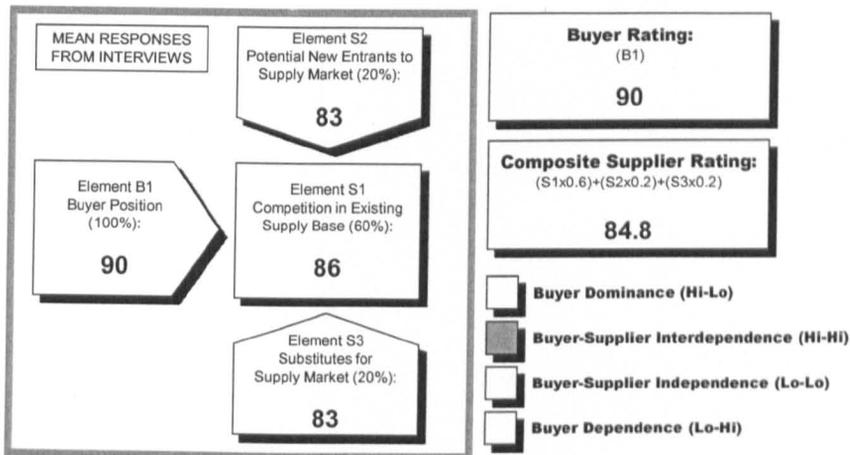


Figure 4.20: Case 5 Power Analysis (Client/Prime Contractor Dyad) - Summary

| | Interviewee | | | | | |
|------------|-------------|----|----|----|----|------|
| | 5a | 5b | 5c | 5d | 5e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 85 | 85 | 85 | 85 | 90 | 86 |
| Element S2 | 85 | 85 | 80 | 85 | 80 | 83 |
| Element S3 | 85 | 85 | 80 | 85 | 80 | 83 |

**TABLE 4.69: Case 5 Power Analysis (Prime Contractor/MechCo Dyad)
- Interviewee Responses**



**Figure 4.21: Case 5 Power Analysis (Prime Contractor/MechCo Dyad)
- Summary**

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 5a | 5b | 5c | 5d | 5e | Mean |
| Element B1 | 25 | 25 | 20 | 25 | 20 | 23 |
| Element S1 | 15 | 15 | 15 | 15 | 15 | 15 |
| Element S2 | 10 | 15 | 10 | 15 | 10 | 12 |
| Element S3 | 35 | 35 | 30 | 35 | 30 | 33 |

TABLE 4.70: Case 5 Power Analysis (MechCo/M&E Components Supplier Dyad) - Interviewee Responses

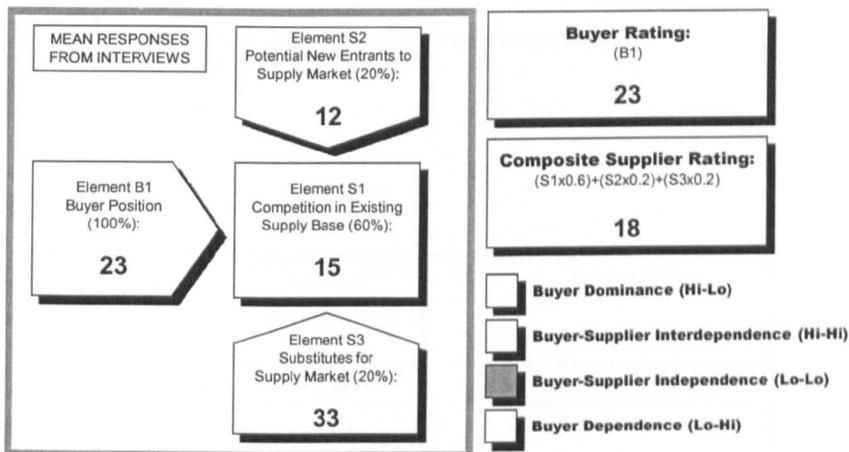


Figure 4.22: Case 5 Power Analysis (MechCo/M&E Components Supplier Dyad) - Summary

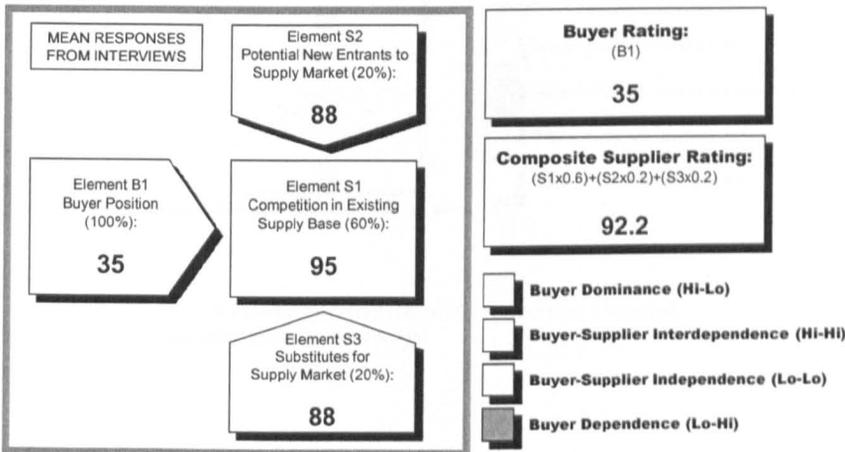
The power analysis shows that both *interdependence* and *independence* relationships exist within the mechanical & electrical components sourcing supply chain.

4.7.6 Case 6 Power Analysis

In order to assess the power structure of PrimeCo’s ready-mixed concrete sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 6a | 6b | 6c | 6d | 6e | |
| Element B1 | 40 | 30 | 35 | 35 | 35 | 35 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 90 | 85 | 85 | 90 | 90 | 88 |
| Element S3 | 90 | 85 | 85 | 90 | 90 | 88 |

**TABLE 4.71: Case 6 Power Analysis (Client/PrimeCo Dyad)
- Interviewee Responses**



**Figure 4.23: Case 6 Power Analysis (Client/PrimeCo Dyad)
- Summary**

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 6a | 6b | 6c | 6d | 6e | Mean |
| Element B1 | 85 | 80 | 85 | 90 | 90 | 86 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 90 | 85 | 85 | 90 | 90 | 88 |
| Element S3 | 90 | 85 | 85 | 90 | 90 | 88 |

TABLE 4.72: Case 6 Power Analysis (PrimeCo/Specialist Material Supplier Dyad) - Interviewee Responses

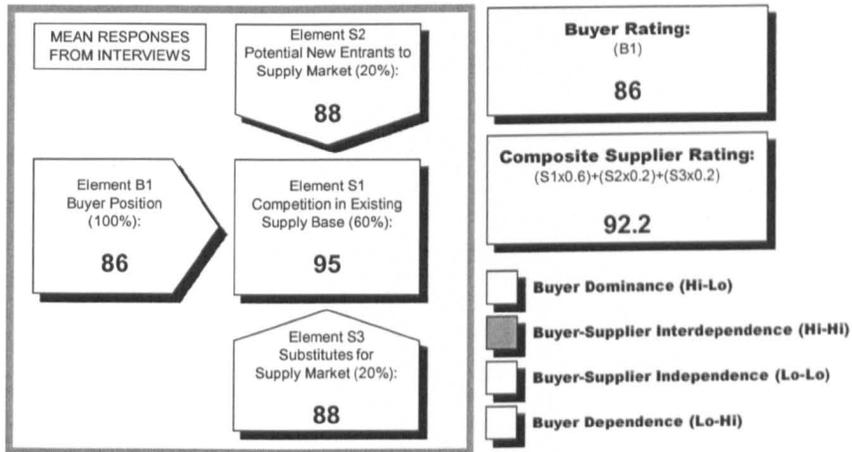


Figure 4.24: Case 6 Power Analysis (PrimeCo/Specialist Material Supplier Dyad) - Summary

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 6a | 6b | 6c | 6d | 6e | Mean |
| Element B1 | 80 | 75 | 80 | 85 | 80 | 80 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 75 | 70 | 75 | 80 | 75 | 75 |
| Element S3 | 90 | 85 | 85 | 90 | 90 | 88 |

TABLE 4.73: Case 6 Power Analysis (Specialist Material Supplier/Cement Supplier Dyad) - Interviewee Responses

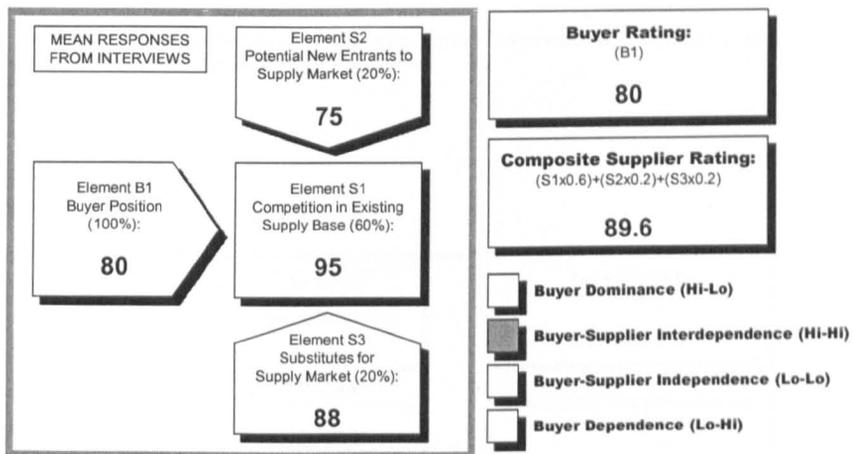


Figure 4.25: Case 6 Power Analysis (Specialist Material Supplier/Cement Supplier Dyad) - Summary

The power analysis shows that both *buyer dependence* and *interdependence* relationships exist within the ready-mixed concrete sourcing supply chain.

4.7.7 Case 7 Power Analysis

In order to assess the power structure of FoodCo’s potato sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 7a | 7b | 7c | 7d | 7e | |
| Element B1 | 80 | 80 | 85 | 80 | 75 | 80 |
| Element S1 | 85 | 85 | 90 | 85 | 85 | 86 |
| Element S2 | 85 | 90 | 90 | 90 | 85 | 88 |
| Element S3 | 85 | 90 | 90 | 90 | 85 | 88 |

TABLE 4.74: Case 7 Power Analysis (Retail Supermarket/FoodCo Dyad) - Interviewee Responses

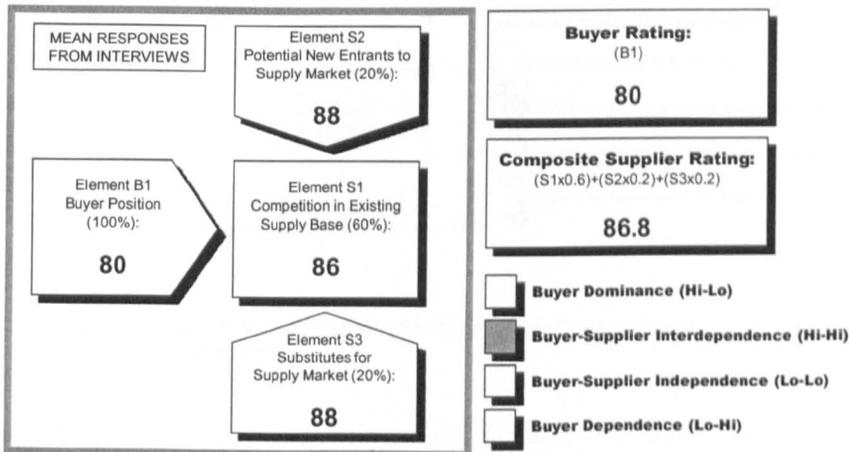
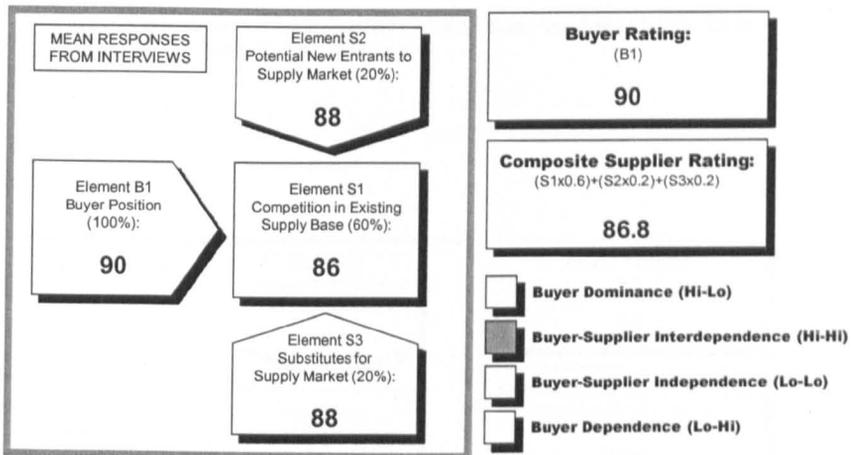


Figure 4.26: Case 7 Power Analysis (Retail Supermarket/FoodCo Dyad) - Summary

| | Interviewee | | | | | |
|------------|-------------|----|----|----|----|------|
| | 7a | 7b | 7c | 7d | 7e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 85 | 85 | 90 | 85 | 85 | 86 |
| Element S2 | 85 | 90 | 90 | 90 | 85 | 88 |
| Element S3 | 85 | 90 | 90 | 90 | 85 | 88 |

**TABLE 4.75: Case 7 Power Analysis (FoodCo/Potato Grower Dyad)
- Interviewee Responses**



**Figure 4.27: Case 7 Power Analysis (FoodCo/Potato Grower Dyad)
- Summary**

The power analysis shows that *interdependence* relationships exist within the potato sourcing supply chain.

4.7.8 Case 8 Power Analysis

In order to assess the power structure of FoodCo’s carton & sleeve packaging sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 8a | 8b | 8c | 8d | 8e | |
| Element B1 | 35 | 35 | 40 | 40 | 40 | 38 |
| Element S1 | 85 | 85 | 90 | 85 | 85 | 86 |
| Element S2 | 85 | 90 | 85 | 90 | 90 | 88 |
| Element S3 | 85 | 90 | 85 | 90 | 90 | 88 |

TABLE 4.76: Case 8 Power Analysis (Retail Supermarket/FoodCo Dyad) - Interviewee Responses

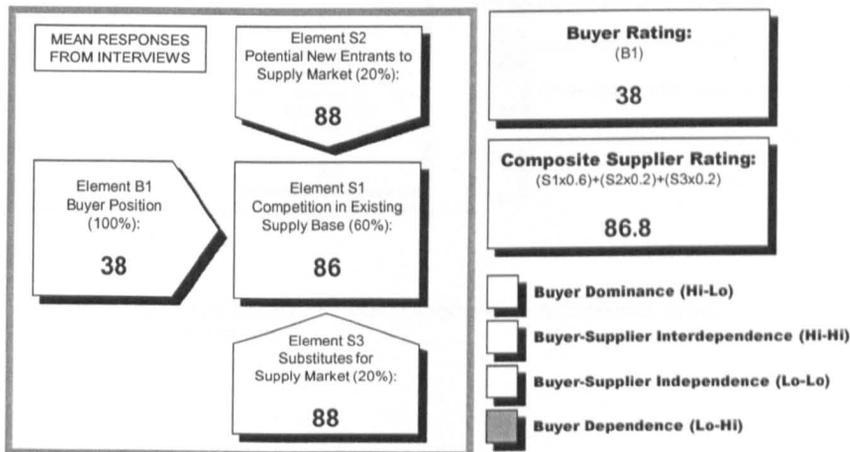
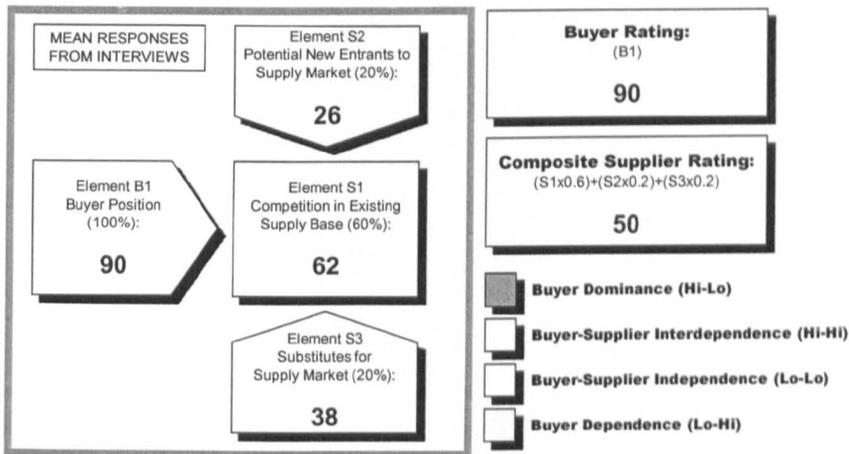


Figure 4.28: Case 8 Power Analysis (Retail Supermarket/FoodCo Dyad) - Summary

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 8a | 8b | 8c | 8d | 8e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 60 | 60 | 60 | 65 | 65 | 62 |
| Element S2 | 25 | 30 | 25 | 25 | 25 | 26 |
| Element S3 | 35 | 35 | 40 | 40 | 40 | 38 |

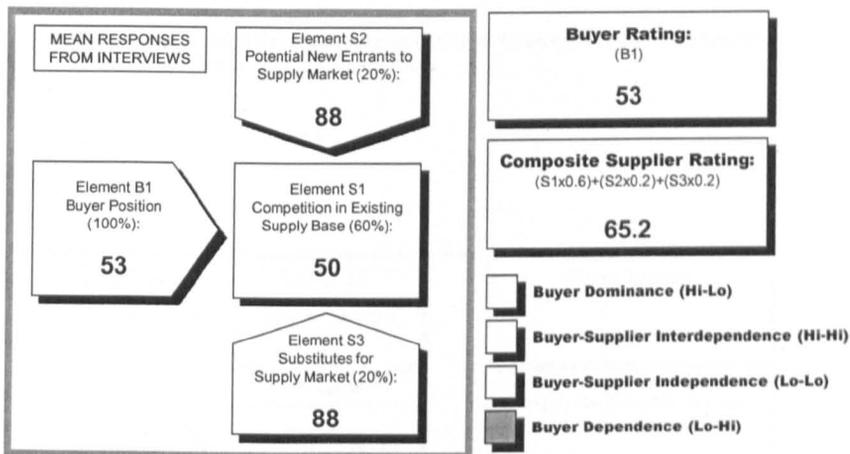
**TABLE 4.77: Case 8 Power Analysis (FoodCo/Carton Converter Dyad)
- Interviewee Responses**



**Figure 4.29: Case 8 Power Analysis (FoodCo/Carton Converter Dyad)
- Summary**

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 8a | 8b | 8c | 8d | 8e | |
| Element B1 | 50 | 55 | 55 | 50 | 55 | 53 |
| Element S1 | 50 | 50 | 50 | 50 | 50 | 50 |
| Element S2 | 85 | 90 | 85 | 90 | 90 | 88 |
| Element S3 | 85 | 90 | 85 | 90 | 90 | 88 |

**TABLE 4.78: Case 8 Power Analysis (FoodCo/Board Provider Dyad)
- Interviewee Responses**



**Figure 4.30: Case 8 Power Analysis (FoodCo/Board Provider Dyad)
- Summary**

The power analysis shows that both *buyer dominance* and *buyer dependence* relationships exist within the carton & sleeve packaging sourcing supply chain.

4.7.9 Case 9 Power Analysis

In order to assess the power structure of BlendCo’s energy sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|----|----|----|----|------|
| | 9a | 9b | 9c | 9d | 9e | |
| Element B1 | 20 | 25 | 20 | 25 | 25 | 23 |
| Element S1 | 20 | 20 | 20 | 20 | 20 | 20 |
| Element S2 | 10 | 15 | 10 | 15 | 15 | 13 |
| Element S3 | 40 | 40 | 40 | 40 | 40 | 40 |

TABLE 4.79: Case 9 Power Analysis (Energy Customers/BlendCo Dyad) - Interviewee Responses

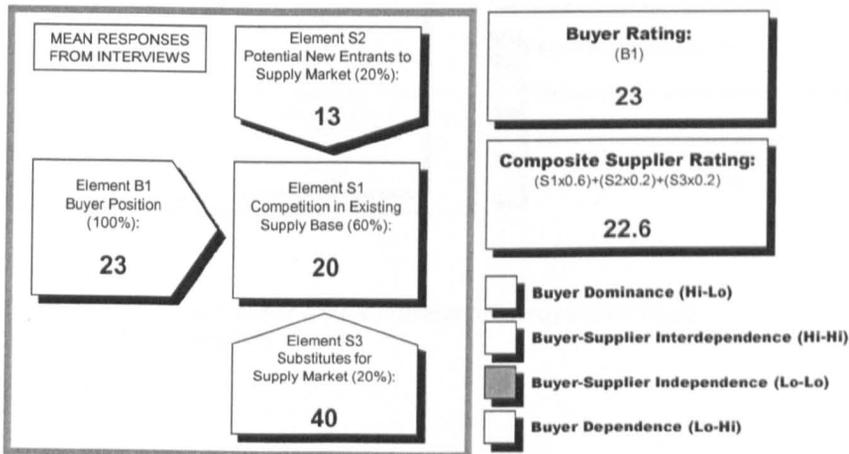
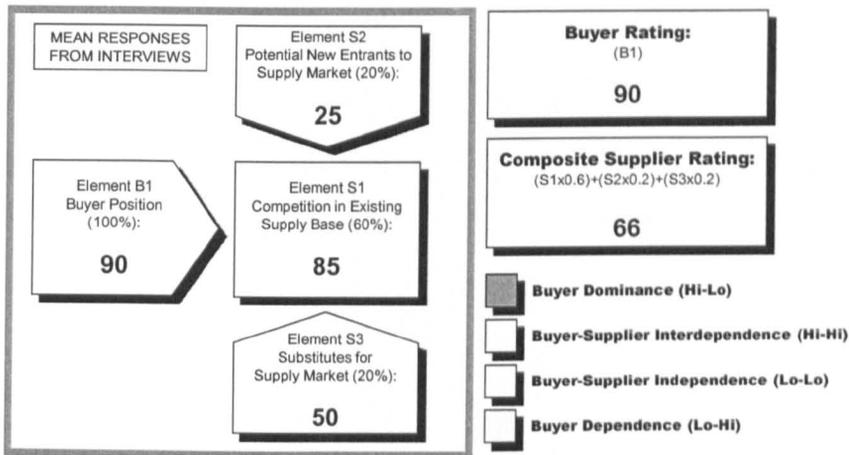


Figure 4.31: Case 9 Power Analysis (Energy Customers/BlendCo Dyad) - Summary

| Interviewee | | | | | | |
|-------------|----|----|----|----|----|------|
| | 9a | 9b | 9c | 9d | 9e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 85 | 85 | 85 | 85 | 85 | 85 |
| Element S2 | 20 | 25 | 25 | 25 | 30 | 25 |
| Element S3 | 50 | 50 | 45 | 50 | 55 | 50 |

**TABLE 4.80: Case 9 Power Analysis (BlendCo/Energy Broker Dyad)
- Interviewee Responses**



**Figure 4.32: Case 9 Power Analysis (BlendCo/Energy Broker Dyad)
- Summary**

| | Interviewee | | | | | |
|------------|-------------|----|----|----|----|------|
| | 9a | 9b | 9c | 9d | 9e | Mean |
| Element B1 | 20 | 25 | 20 | 25 | 25 | 23 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 90 | 90 | 85 | 90 | 85 | 88 |
| Element S3 | 90 | 90 | 85 | 90 | 85 | 88 |

TABLE 4.81: Case 9 Power Analysis (Energy Broker/Power Generators Dyad) - Interviewee Responses

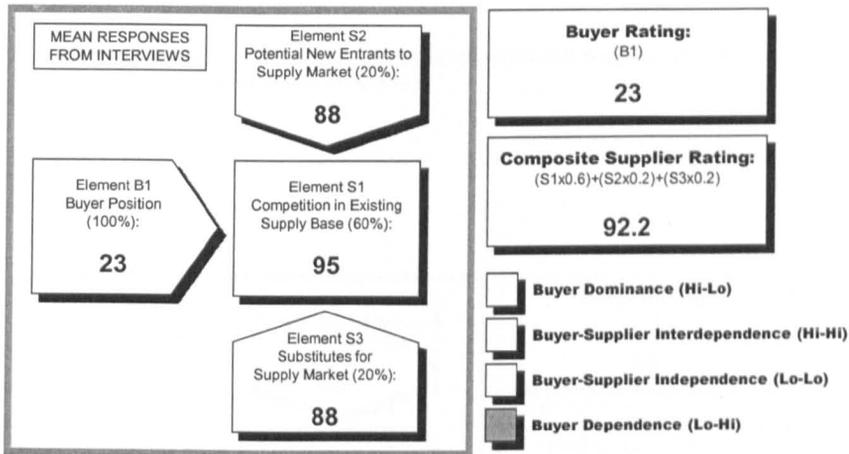


Figure 4.33: Case 9 Power Analysis (Energy Broker/Power Generators Dyad) - Summary

The power analysis shows that *independence*, *buyer dominance* and *buyer dependence* relationships exist within the energy sourcing supply chain.

4.7.10 Case 10 Power Analysis

In order to assess the power structure of ExtractCo’s life-of-field seismic imaging sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the power relationships that exist at each stage of the chain.

| Interviewee | | | | | | |
|-------------|-----|-----|-----|-----|-----|------|
| | 10a | 10b | 10c | 10d | 10e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 85 | 85 | 85 | 85 | 85 | 85 |
| Element S2 | 55 | 60 | 65 | 60 | 60 | 60 |
| Element S3 | 40 | 35 | 40 | 40 | 35 | 38 |

ExtractCo/Navigation & QC Services Supplier Dyad

| Interviewee | | | | | | |
|-------------|-----|-----|-----|-----|-----|------|
| | 10a | 10b | 10c | 10d | 10e | Mean |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 45 | 45 | 45 | 45 | 45 | 45 |
| Element S2 | 55 | 60 | 65 | 60 | 60 | 60 |
| Element S3 | 40 | 35 | 40 | 40 | 35 | 38 |

ExtractCo/All Other Supplier Dyads

TABLE 4.82: Case 10 Power Analysis (ExtractCo/All Supplier Dyads) - Interviewee Responses

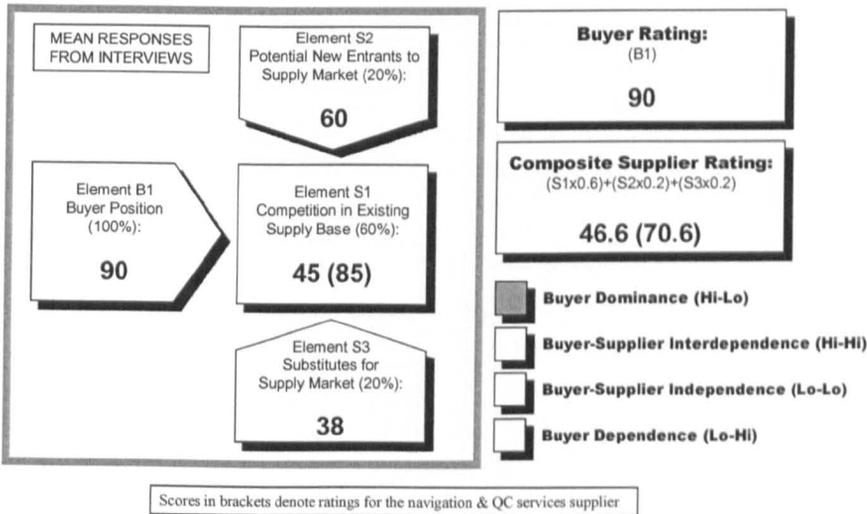


Figure 4.34: Case 10 Power Analysis (ExtractCo/All Supplier Dyads) - Summary

The power analysis shows that *buyer dominance* relationships exist within the life-of-field seismic imaging sourcing supply chain.

4.7.11 Case 11 Power Analysis

In order to assess the power structure of IndirectCo’s accounts payable sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the type of power relationship that exists at each stage of the supply chain.

| | Interviewee | | | | | Mean |
|------------|-------------|-----|-----|-----|-----|------|
| | 11a | 11b | 11c | 11d | 11e | |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 45 | 45 | 45 | 40 | 50 | 45 |
| Element S2 | 40 | 35 | 40 | 35 | 40 | 38 |
| Element S3 | 40 | 35 | 40 | 35 | 40 | 38 |

TABLE 4.83: Case 11 Power Analysis (IndirectCo/Service Provider Dyad) - Interviewee Responses

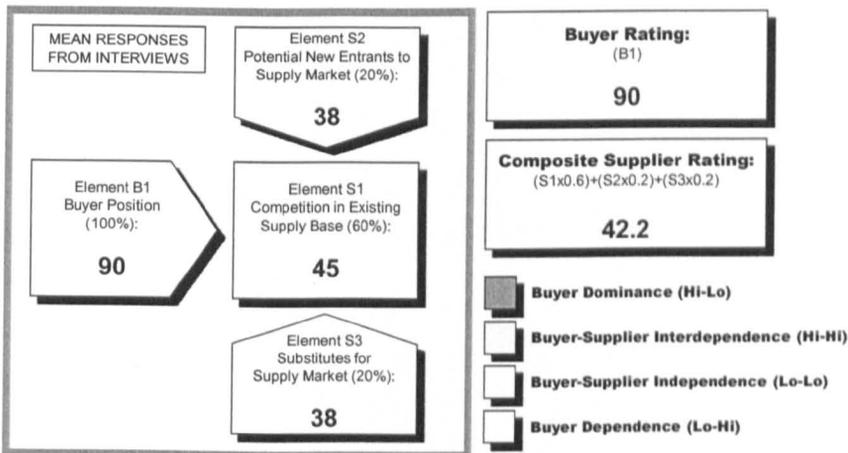


Figure 4.35: Case 11 Power Analysis (IndirectCo/Service Provider Dyad) - Summary

The power analysis shows that a *buyer dominance* relationship exists within the accounts payable sourcing supply chain.

4.7.12 Case 12 Power Analysis

In order to assess the power structure of IndirectCo’s high-level legal services sourcing supply chain, a power analysis was undertaken. The interviewees were asked to rate the buyer and seller power resources according to a predetermined scoring system and the mean responses were used to determine the power relationship that exists at each stage of the chain.

| | Interviewee | | | | | Mean |
|------------|-------------|-----|-----|-----|-----|------|
| | 12a | 12b | 12c | 12d | 12e | |
| Element B1 | 90 | 90 | 90 | 90 | 90 | 90 |
| Element S1 | 95 | 95 | 95 | 95 | 95 | 95 |
| Element S2 | 85 | 90 | 90 | 85 | 90 | 88 |
| Element S3 | 85 | 90 | 90 | 85 | 90 | 88 |

TABLE 4.84: Case 12 Power Analysis (IndirectCo/Service Provider Dyad) - Interviewee Responses

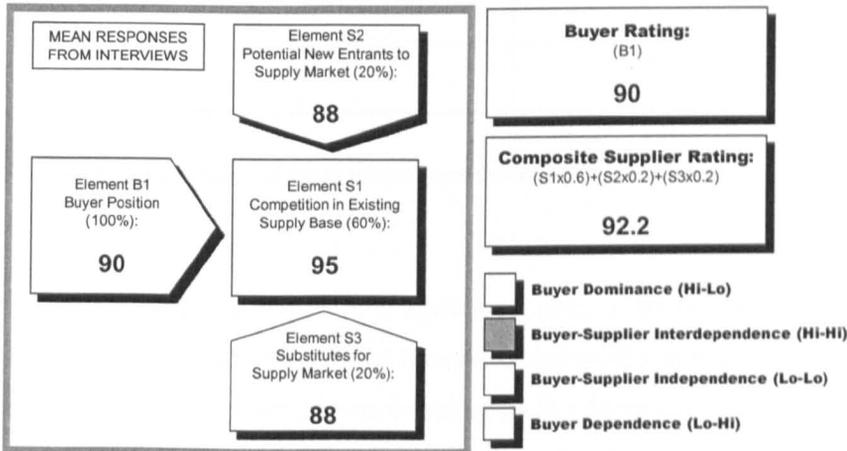


Figure 4.36: Case 12 Power Analysis (IndirectCo/Service Provider Dyad) - Summary

The power analysis shows that an *interdependence* relationship exists within the high-level legal services sourcing supply chain.

Chapter Five

Discussion

5.1. Analysis of the Organisational Evidence

Table 5.1 presents a summary of the organisational evidence.

| SURVEYED ORGANISATION | PROFIT MARGIN IN RELATION TO COMPETITORS (LAST 5 YEARS) | IS SUSTAINABLE COMPETITIVE ADVANTAGE ACHIEVED? |
|-----------------------|---|--|
| FoodCo | Quartiles 2, 3 or 4 Mainly Quartile 4 | No |
| BlendCo | Quartiles 1 or 2 Mainly Quartile 1 | Yes |
| ExtractCo | Quartile 1 throughout | Yes |
| IndirectCo | Quartile 1 throughout | Yes |
| MechCo | Quartile 3 or 4 Mainly Quartile 4 | No |
| PrimeCo | Quartiles 3 or 4 | No |

TABLE 5.1: Summary of the Organisational Evidence

In terms of sustainable competitive advantage, three of the organisations (BlendCo, ExtractCo and IndirectCo) achieve above average profits in relation to their competitors over a period of five years. However, this does not necessarily mean that the sourcing strategies that these companies adopt contribute directly to profitability. The sustainable competitive advantage displayed by the three organizations may be attributable to a range of different performance factors other than the sourcing strategy adopted. Similarly, the three organizations that do not demonstrate sustainable competitive advantage (FoodCo,

MechCo and PrimeCo) may have sourcing strategies that contribute directly to profitability but which are disguised by the overall performance of the company.

It was not possible to isolate the profitability figures of the organisations in relation to the sourcing strategies deployed. Since a quantitative measure of sustainable competitive advantage was not therefore possible, a proxy measure based on Collis & Montgomery's five tests of sustainable competitive advantage was used in order to ascertain the advantage-generating potential of each sourcing strategy. This assessment is discussed in the following sections.

5.2. Analysis of the Reactive Case Evidence

5.2.1 Case 1 Analysis

Figure 5.1 presents a summary of the findings related to BlendCo's chemicals sourcing supply chain.

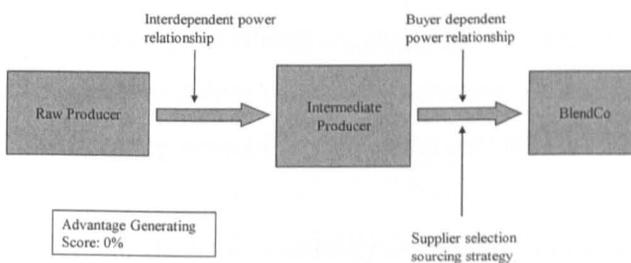


FIGURE 5.1: BlendCo's Chemicals Sourcing Supply Chain Summary of Findings

It can be seen that a *supplier selection* sourcing strategy is deployed which achieves an *advantage-generating score of 0%*. This indicates that the approach used for sourcing chemicals does not achieve sustainable competitive advantage. This is consistent with

Research Question 1, which asserts that reactive sourcing strategies, such as supplier selection, do not lead to sustainable competitive advantage.

Although a market price is achieved for twelve months, there are no benefits of the sourcing strategy in relation to competitors. The drawbacks are high risk and lack of customer service. The lack of a close relationship exposes BlendCo to shortages as well as inflexible and unresponsive deliveries. Neither functionality nor cost has improved. BlendCo would be quite willing to pay more for added customer service, but the suppliers are not interested. The success of the sourcing strategy can be determined in financial terms by looking at year on year price changes and these have increased rather than decreased, although no worse than competitors. The sourcing strategy does not lead to above normal profits over the long-term, as BlendCo are paying a market price and no better than their competitors.

The sourcing strategy is not seen as successful by key decision-makers in the organisation. They are therefore interested in taking a more proactive approach by talking with two suppliers over establishing three-year contracts. This has not been achieved before and one intermediary producer is showing a great deal of interest. By offering long-term business, BlendCo would establish a fixed price for three years, after paying a slight premium in the first year. This would enable them to eradicate the continual price increases and also enable them to achieve their customer service objectives. The idea behind the proposed three-year deal is for the supplier to become a chemicals portfolio manager who would look at BlendCo's chemicals use and suggest improvements. Part of this would be efforts to reduce variety and variation of demand, thus increasing volumes. This proactive sourcing strategy is seen as the way forward for this category of spend.

BlendCo are investigating the possibility of adopting a proactive sourcing strategy by working closely with a preferred first-tier supplier. However, Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. The *buyer dependence* power relationship at the *first-tier level* of the supply chain may therefore prove problematic, as BlendCo may not be able to appropriate the advantage-generating potential of the proactive sourcing strategy for itself.

BlendCo is not attractive as a customer, as they are not seen as important to the intermediaries. Although regular and predictable, the size of BlendCo's chemical spend is very small and fragmented. Furthermore, the intermediaries do not gain any prestige value by association with BlendCo. In fact, BlendCo are the typical nuisance customer, with limited opportunity for the suppliers to achieve revenue or returns from the business.

For many of the chemicals that BlendCo buys, it understand very clearly what the supply offering is and the cost structure of it, but cannot take advantage of this information due to the unattractive nature of its demand. The intermediaries are fairly open with supply information as a means of justifying regular price increases, safe in the knowledge that they are in a powerful position and have nothing to fear in disclosure. Industry cost structures are rising at the moment but, if they were collapsing, then perhaps the intermediaries would be less open with their supply information. The suppliers control the design and specification of the products, which puts them in an even stronger position.

The whole industry is consolidating at the first-tier stage and there are now only a very few, extremely large intermediaries for the chemicals. Many of the chemicals can only be obtained through a single supplier, thus increasing the risk to BlendCo. The suppliers can only offer differentiation in terms of customer service, such as logistics and reduced delivery times. They cannot differentiate by product specification, as this is dictated by industry standards and regulations. However, flexibility and responsiveness is very important to BlendCo, as they often require small quantities of critical chemicals immediately in order that their processing operations do not stop. Price rather than technology differentiates the market, although customer service is even more important.

There are two market leaders in terms of intermediaries, who are extremely large corporations and their response to new entrants is hostile. Furthermore, the barriers to entry are high. It is very difficult to get into the chemicals market due to the huge capital costs involved. The possibility of substituting products is looked at constantly by BlendCo, both on health and safety and environmental grounds as well as with regard to cost savings. However, there are limitations due to how the chemicals fit into BlendCo's

usage profile and whether they are actually suitable for the food industry. There is a laboratory on site where different chemical entities are constantly being evaluated.

The situation at the *second-tier level* of the supply chain is more conducive to a proactive approach being deployed. The intermediate producers are attractive as customers, due to their large size. Their spend is large, regular and predictable, since the intermediary consolidates demand from many different sources. The raw producer gains prestige value by association with the intermediaries, as the latter are large, blue-chip companies. However, information on the raw producers' production costs is not shared with the intermediaries. There are many industry standards for chemicals used in the food industry which are obviously not owned by any particular company. The raw producers often cannot make enough of a particular chemical to satisfy overall demand, therefore they rely on the intermediaries to top up the supply. Control over the design and specification is therefore shared.

There are three times as many raw producers as intermediaries. However, the suppliers can offer meaningful differentiation inasmuch as they sometimes have unique products which only they can manufacture. The raw producers are not therefore always interchangeable. The technology is well-established and well-understood and price competition therefore differentiates the market. There are no market leaders at the raw producer stage.

There are high barriers to entry at the second-tier stage in terms of capital investment. Furthermore, potential new entrants would have to compete in a price-driven market and would find it difficult to re-coup that investment. Incumbents could also reduce prices to see off new entrants. Substitution is limited at present, but BlendCo is constantly trying to redefine requirements towards non-chemical alternatives and tries to encourage the intermediaries in this respect.

5.2.2 Case 2 Analysis

Figure 5.2 presents a summary of the findings related to ExtractCo's drilling mud supply chain.

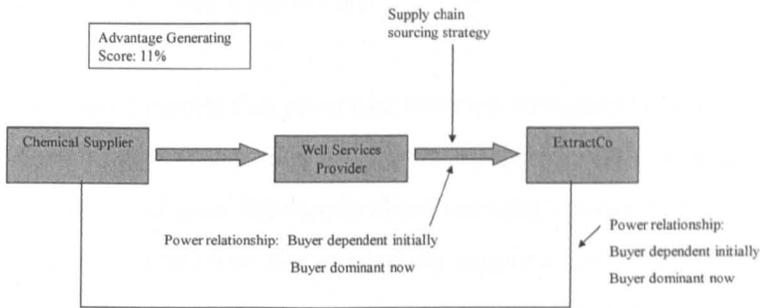


FIGURE 5.2: ExtractCo's Drilling Mud Supply Chain Summary of Findings

It can be seen that a *supply chain sourcing* strategy is adopted which achieves an *advantage-generating score of 11%*. Although the value of the sourcing strategy can be appropriated by ExtractCo and does not need to be passed on to suppliers or customers, all the other advantage-generating criteria are negative. This indicates that the approach used for sourcing chemicals does not achieve sustainable competitive advantage. This is consistent with Research Question 1, which asserts that reactive sourcing strategies, such as supply chain sourcing, do not lead to sustainable competitive advantage.

The benefit of the sourcing strategy is that ExtractCo is able to identify alternative sources of supply, which are more easily available and at a lower cost. The scarcity value of the input has been eradicated and the opportunistic behaviour of the suppliers reduced. ExtractCo now has a much clearer understanding of its supply chain. The drawback of the sourcing strategy is that only a market price can be achieved. Functionality remains static but cost is reduced substantially.

It is possible to determine the success of the sourcing strategy in financial terms by reference to the reduced cost of supply. Although the sourcing strategy does not lead to above normal profits over the long-term, as the substitute ingredient can be sourced on the open market and is therefore available to competitors, it is seen as successful by key decision-makers in the organisation, because of its advantages over the previous

approach. If the supplier selection approach had been adopted, ExtractCo would have had no influence over the upstream activities of the supply chain. This indicates that the supply chain sourcing approach has advantages over the supplier selection strategy, but the gains are not strategically significant.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. Since ExtractCo has adopted the supply chain sourcing approach, it is now in a position of *buyer dominance* at the *first-tier level* of the supply chain, which will enable the company to appropriate any advantage-generating potential if it chooses to deploy a proactive sourcing strategy.

ExtractCo is very attractive as a customer. It is a large, reputable, blue-chip, multinational organisation. The well services provider only works within the oil and gas industry, so has to be interested in ExtractCo as a customer, since it is one of the largest global players in the industry. The size of spend was relatively small when the contract was first signed, due to the new market and limited initial capacity. However, the market demand has now expanded considerably, thus increasing the amount of spend with the supplier. The well services provider gains good prestige value by association with the buyer. ExtractCo's initial information on the supply offering was poor, however, since the supply chain sourcing exercise was conducted, good cost information is now available regarding the ingredients of the drilling mud. However, the supplier controls the design and specification.

There was only one qualified supplier able to operate in this particular location at the time the contract was signed. However, there are now a number of other players who can offer services in the area. The well services provider was initially able to differentiate itself by geographical presence, thus making itself unique. However, the new players offer fairly similar products and services, so suppliers are now interchangeable. Technology is a given and price competition therefore differentiates the market. The market was monopolistic initially, but is now well-contested with no clear leaders. There is no evidence to suggest that suppliers respond aggressively to new entrants. The main barriers to entry are the capital costs involved, the need for a global presence and the technical expertise required. Drilling mud will always be required, but it is now possible

to re-specify the requirements to take account of the alternative chemical, thus reducing the scarcity value of the key ingredient and making it substitutable.

At the *second-tier level* of the supply chain, despite its large size and status, ExtractCo is not particularly attractive as a customer to the incumbent chemical supplier, as its demand only represents a small part of the latter's business. However this situation changes when the substitute ingredient is sourced from a smaller, less powerful supplier. Furthermore, the size of spend for the chemical ingredient is likely to grow in line with the increased demand for the drilling mud. The supplier gains good prestige value by association with the buyer. ExtractCo's initial information on the supply offering was poor, however, since the supply chain sourcing exercise was conducted, good cost information is now available regarding the chemical inputs. However, the supplier controls the design and specification of the product.

There was only one chemical supplier who could offer the key ingredient, but a number of others can provide the substitute. The supplier was able to differentiate itself by being the sole source of supply, but this is now not true. Technology differentiated the market, but price competition now prevails. The market was monopolistic initially, but is now well-contested with no clear leaders. There is no evidence to suggest that suppliers respond aggressively to new entrants. The barriers to entry are lower at the second-tier stage of the supply chain, the main one being the capital costs of setting up chemical plants. The original key ingredient was unique, but it is now substitutable.

The contract with the well services provider is soon to be renewed. ExtractCo is now in a much stronger position than it was when the original contract was negotiated and can choose between two sourcing options. The company can continue with its supply chain sourcing approach and directly source the substitute chemical ingredient for use in the drilling mud. Alternatively, ExtractCo could revert to a supplier selection approach by using its increased leverage and the more contested market in order to select a cost effective first-tier supplier through a formal tendering exercise. The eventual winner may be the incumbent drilling mud provider or could be one of the other suppliers that are now willing to participate in this market.

5.2.3 Case 3 Analysis

Figure 5.3 presents a summary of the findings related to IndirectCo's facilities management supply chain.

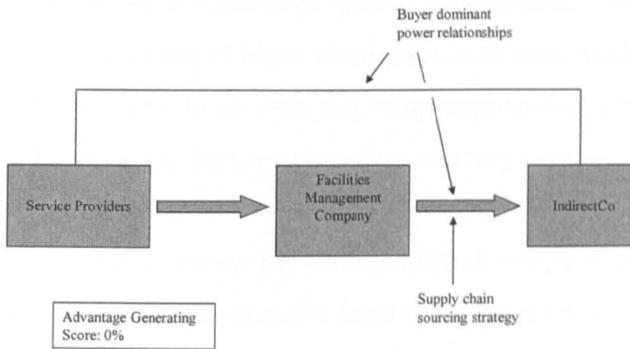


FIGURE 5.3: IndirectCo's Facilities Management Supply Chain Summary of Findings

It can be seen that a *supply chain sourcing* strategy is adopted which achieves an *advantage-generating score of 0%*. This indicates that the approach used for sourcing facilities management services does not achieve sustainable competitive advantage. This is consistent with Research Question 1, which asserts that reactive sourcing strategies, such as supply chain sourcing, do not lead to sustainable competitive advantage.

The benefits of the sourcing strategy are increased transparency and the creation of a more competitive market. The only drawback of the sourcing strategy is that IndirectCo may get sucked into micro-managing the service providers, which it does not want to do. Cost has been reduced and functionality has remained the same. It is possible to determine the success of the sourcing strategy in financial terms, but it does not lead to above normal profits over the long-term as this is a non-strategic purchase with a minimal affect on the bottom line.

The sourcing strategy is seen as successful by key decision-makers in the organisation. If the service was sourced using the supplier selection approach, there would be less

investment in resources. Although the supply chain sourcing approach is less resource intensive than the supplier development strategy adopted for other categories of spend, there are still increased search costs involved with sourcing the various service providers as opposed to dealing with one facilities management company.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. IndirectCo is in a position of buyer dominance with both its first- and second-tier suppliers. This will enable the company to appropriate any advantage-generating potential if it chooses to deploy a proactive sourcing strategy.

At the *first-tier level* of the supply chain, IndirectCo is very attractive as a customer, as it is a blue chip company. The spend is large (with the potential to be bigger), regular and predictable. The facilities management company gains a high degree of prestige value by association with the buyer, the relationship presenting a substantial level of marketing opportunity. Although IndirectCo's information on the supply offering was previously rather poor, it is now relatively good. IndirectCo controls the design and specification.

There are only a few facilities management companies who can operate at a global level, more who have a regional presence and hundreds of local providers. IndirectCo chooses the level of service provision. Some suppliers can offer meaningful differentiation, since IndirectCo has fairly high standards in terms of quality, health and safety, and ethical requirements which not all facilities management providers can meet. However, IndirectCo can change suppliers at will, therefore the degree of supplier interchangeability is high. Price competition differentiates the market. There are market leaders and their response to new entrants would be aggressive, even though there are few barriers to entry. Many companies are moving into this area, as reasonable margins can be made and facilities management is often a natural extension of what they do. It is a very competitive market and substitution is possible by conducting facilities management in-house.

At the *second-tier level* of the supply chain, the characteristics are very similar to the relationship between IndirectCo and the facilities management company, particularly on the demand side. IndirectCo are even more dominant over the upstream service

providers, due to the advantageous supply-side characteristics, such as the market being even more highly contested, the lack of market leaders and lower barriers to entry in comparison with the first-tier level.

IndirectCo is very attractive as a customer, as it is a blue chip company. The spend is large (with the potential to be bigger), regular and predictable. The supplier gains a high degree of prestige value by association with the buyer, the relationship presenting a substantial level of marketing opportunity. Although IndirectCo's information on the supply offering was previously rather poor, it is now relatively good. IndirectCo controls the design and specification.

There are many suppliers who can provide the individual services. There is some degree of differentiation (e.g. specialist security suppliers in dangerous countries), but suppliers are generally interchangeable. Price competition differentiates the market and there are no clear market leaders. There are few barriers to entry and the competition in the market is intense. Substitution is possible by conducting the services in-house.

5.2.4 Case 4 Analysis

Figure 5.4 presents a summary of the findings related to IndirectCo's low-level legal services supply chain.

It can be seen that a *supplier selection* sourcing strategy is deployed which achieves an *advantage-generating score of 0%*. This indicates that the approach used for sourcing low level legal services does not achieve sustainable competitive advantage. This is consistent with Research Question 1, which asserts that reactive sourcing strategies, such as supplier selection, do not lead to sustainable competitive advantage.

The only benefit of the sourcing strategy is that a market price is obtained for the service. The drawback is that innovation and commitment will not be forthcoming from the supplier, but this is not needed for such a commoditised service. Functionality and cost are determined by the market and cannot really be improved on. The sourcing strategy is transparent and is therefore measurable in financial terms.

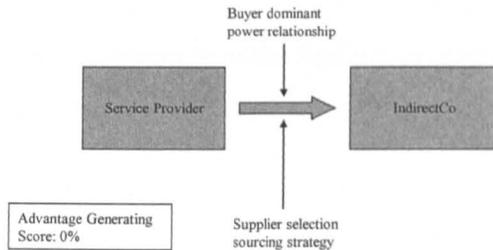


FIGURE 5.4: IndirectCo's Low Level Legal Services Supply Chain Summary of Findings

It does not lead to above normal profits over the long-term, since this is a non-strategic item of spend. The sourcing strategy is seen as successful by key decision-makers in the organisation only inasmuch as it is appropriate to the contingent market circumstances.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. IndirectCo is in a position of buyer dominance in this supply chain, which should enable the company to appropriate any advantage-generating potential if it chooses to deploy a proactive sourcing strategy.

IndirectCo is very attractive as a customer, as it is a blue chip company, and the spend is large, regular and predictable. The service provider gains a high degree of prestige value by association with the buyer, the relationship presenting a substantial level of marketing opportunity. IndirectCo controls the design and specification of the service and has excellent information on the supply offering and the supply base.

There are many service providers for this category of spend, none of which can offer meaningful differentiation. Suppliers are therefore interchangeable and price competition differentiates the market. There are no clear market leaders, the barriers to entry are low,

and the response to new entrants would be muted. It is a very competitive market and substitution is possible by conducting the low level legal services work in-house.

5.2.5 Case 5 Analysis

Figure 5.5 presents a summary of the findings related to MechCo's mechanical & electrical components supply chain.

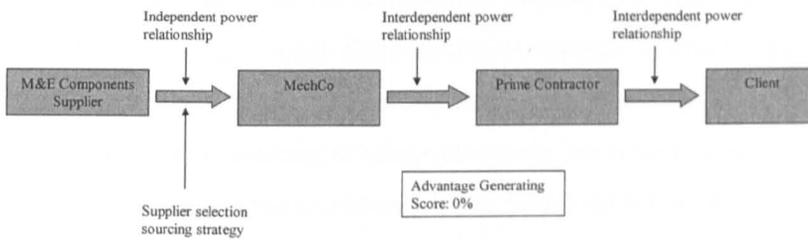


FIGURE 5.5: MechCo's Mechanical & Electrical Components Supply Chain Summary of Findings

It can be seen that a *supplier selection* sourcing strategy is deployed which achieves an *advantage-generating score of 0%*. This indicates that the approach used for sourcing M&E components does not achieve sustainable competitive advantage. This is consistent with Research Question 1, which asserts that reactive sourcing strategies, such as supplier selection, do not lead to sustainable competitive advantage.

The benefits of the sourcing strategy are that it is not resource intensive and provides MechCo's functional requirements quickly, effectively and easily without the need for procurement expertise. There is no ambiguity over price and no legal contracts to be drawn up. The drawbacks of the sourcing strategy are that it depends on a detailed functional design being available, and there is limited opportunity to achieve innovation and better functionality products. However, this is not an important requirement, due to

the detailed design specification. The effect of the sourcing strategy on cost is neutral, but the effect on functionality is negative.

The sourcing strategy is seen as successful by key decision-makers in the organisation inasmuch as it delivers the requirements to time and cost as specified in the design specification. It is not possible to determine the success of the sourcing strategy in financial terms, as there is no internal measure of cost effectiveness, only the anticipated price against what is actually paid. The sourcing strategy does not, however, lead to above normal profits over the long-term.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. The M&E components supply chain has buyer/supplier *interdependence* power relationships at the *first-tier* and *second-tier* levels, which would be conducive to adopting a proactive sourcing strategy. However, the power relationship at the *third-tier* level is that of buyer/supplier independence, which does not encourage proactive sourcing. Full-blown supply chain management would not therefore be appropriate for this category of spend. Only partial supply chain management or supplier development at the first- and/or second-tier levels should be considered. It should be noted, though, that the value generated by a proactive sourcing strategy would need to be shared equally between the supply chain partners, due to the interdependent nature of the power relationship, and cannot be appropriated by MechCo alone.

At the *first-tier level* of the supply chain, the client is a NHS Trust and is the end customer of the project. In the construction industry, small and occasional clients appoint an architect to develop their brief, and advise on the appointment of other professional services, construction firms and subcontractors. In this case, the NHS Trust appointed an architect to assist with these activities and subsequently play an active role in the management of the project. The client selected the prime contractor in accordance with EU procurement directives within a PFI contract strategy.

The client selected the prime contractor for the design and construction elements of the project, which amounted to £66.25 million, of which £19.1 million (29%) was for M&E equipment. The prime contractor was selected, not because it had the lowest price, but

due to its significant experience with delivering similar private finance projects to a very high quality, within timescales and incorporating the latest technology. This supply chain involved the integration of a highly specialised product into a complex project, which reduced the number of firms able to undertake the work. Firms with the required level of competence and expertise are largely confined to the major players with considerable experience with similar projects. The prime contractor (turnover £108m) is the special projects division of a larger parent company, with a turnover of £568m. Although it is not one of the leading industry players, it is still a large organisation in an industry where only one per cent of firms have a turnover of more than £5m.

There are many clients in the total construction market but fewer in the healthcare sector. This makes the buyer attractive as a customer. The project value of £66m represents 20% of the prime contractor's turnover, who additionally gains prestige value by association with the client and the project. The client has an infrequent, one-off need to go to the construction market, and the nature of the spend is therefore large, but irregular and unpredictable. The client's information on the supply offering is relatively poor and its search costs high. Consequently, the client has relatively poor knowledge and understanding about construction products and services and the strategies of industry players. However, it is the client who controls the design and specification.

There are many prime contractors in the total construction market but fewer operating in the healthcare sector with the required level of expertise. Furthermore, the prime contractor's offerings are not commoditised or standardised but highly customised to the specific requirements of the client and working in a healthcare environment. Both technology and price are important but technology differentiates the market in such a specialist field. The prime contractor is a market leader in the healthcare sector and would respond fairly aggressively to new entrants. There are also considerable barriers to entry in terms of size, reputation, expertise and experience for this size and complexity of project. Substitution is not possible. A project of this size and complexity will always need a specialist prime contractor to provide planning, management and technical expertise.

At the *second-tier level* of the supply chain, if there are no complexities or uncertainties involved with the M&E package and a prime contractor has in-house expertise in the

area, it may decide to integrate the element itself. However, if the package involves a high degree of complexity and/or the prime contractor does not possess the required expertise, it will frequently sub-contract the works to a specialist M&E firm to undertake the integration.

Within this particular project, MechCo was selected to undertake the design and installation of the M&E equipment and services. The key selection criteria were project cost, project quality, and the firm's knowledge and understanding of the special planning and operating procedures required for a healthcare environment. The M&E element of the project involved the installation of heating, air conditioning, cooling, electrical products, lifts and drainage, as well as specialist services such as operating theatre lighting, medical gas supplies and nurse call stations. The company also used innovative installation methods (including prefabrication and pre-assembly) to deliver work to very high quality standards and strict hygiene regulations to ensure future emergency and maintenance costs were minimised for the NHS Trust.

There are no single dominant players within the M&E contracting market; the largest firm has a market share of below five percent. In fact, the top ten companies only account for a fifth of the total M&E market. However, these facts do not fully illustrate the relative power of the larger players in relation to construction firms. A number of the large M&E contractors are actually owned and controlled by the largest construction companies, which considerably increases their market power. MechCo has been able to achieve robust performance by focusing on profitable niche sectors of the industry rather than chasing revenue in broader markets.

There are many construction firms acting as buyers in the general M&E market but fewer for specialist M&E products and services in the healthcare sector. The prime contractor is therefore attractive as a customer. The M&E project spend of £19.1m represents 7% of MechCo's turnover, which is quite high for the construction industry, and MechCo also gains prestige value by association with the buyer and the project. The prime contractor has a regular need to source from the M&E market but there is no certainty or regularity about specific requirements and volumes. The nature of the spend is therefore large, regular but unpredictable. The prime contractor's information on the supply offering is very good. It has extensive knowledge and understanding of M&E products and services

and the strategies of industry players. The buyer also controls the design and specification.

There are many suppliers in the general M&E market but fewer able to undertake projects of this scale and with the necessary expertise to operate within a highly specialised and controlled environment. MechCo's offerings, taken as a whole, are not commoditised or standardised but highly customised to the specific requirements of the project. Its role as a systems integrator means that it can offer meaningful differentiation and the company is not therefore easily interchangeable with other suppliers. Technology rather than price is the market differentiator, as suppliers need a high degree of technical knowledge to integrate specialist equipment into the project environment. MechCo is a market leader in the specialist M&E healthcare sector and their response to new entrants would be fairly aggressive. The barriers to entry in terms of specialist technical knowledge and integration skills are fairly high. Substitution is not really possible either, as specialist M&E equipment and services will always be required for this type of project.

The *third-tier level* of the supply chain involves the supply of the individual components to the M&E contractor so that they can be integrated into the M&E package that in turn is integrated into the construction project. For this specific hospital project, these components range from highly commoditised items such as smoke detectors, cables and electrical sockets, to highly specialised items including operating theatre lighting, sterile air conditioning units and lift machinery.

Although no M&E contractor represents a large enough share of the market to control prices, those with regular expenditures have a greater scope for leverage over, and control of, dependent suppliers. This may be possible to a greater extent with certain commodity products in localised contested marketplaces. Although some components, such as security devices, lifts and cabling, have a limited number of suppliers who may be able to exert a degree of leverage over the M&E contractors, these situations are the exceptions in what is a highly fragmented supply chain stage. The actual number of firms operating at this stage is difficult to quantify as it encompasses a wide range of firms from diverse industries.

Given the conditions of open competition in what is largely a commodity market, there are a number of key resources required by component suppliers at this stage. Superior competence in technological innovation is absolutely critical to the sustained success of organisations at this stage. This supply innovation may be in response to increasing functional demands of the end customer, or legislation requiring the harmonisation of EU standards. There is also a requirement for UK firms to be more operationally efficient so that they remain competitive, as the growth in cheaper imports of standard products cannot be prevented. Similar to firms operating at the other stages of the supply chain, the component supplier also needs a strong reputation and identity within the marketplace, because the product itself cannot be a basis for differentiation.

MechCo is not particularly attractive as a customer because it has a relatively low percentage share of the M&E components market. Furthermore, the M&E components requirement for the project in question amounts to an insignificant proportion (typically less than 0.01%) of suppliers' turnover and they do not gain any prestige value by association with the buyer. In terms of the nature of the spend, MechCo has a regular need to source from the M&E components market, but there is no certainty or regularity about specific requirements and volumes of particular components. This makes the spend small, irregular and unpredictable. Supplier catalogues enable MechCo to acquire extensive knowledge and understanding of commodity M&E products and make robust comparisons between suppliers. However, the supplier controls the design and specification.

There are many suppliers for commoditised M&E components. The M&E component supplier has a strong brand image and reputation, but is unable to differentiate its products. Suppliers are therefore interchangeable. This is a highly commoditised, competitive market differentiated by brand and reputation rather than technology. There are no real market leaders and the response to new entrants would be muted. There are also few barriers to entry. A limited number of substitutes are available and the design requirements for M&E equipment can be re-configured to enable substitutes to be used.

Two final points should be made about the supply chain. First, since the majority of the M&E purchases are standardised and commoditised (smoke detectors, cables, electrical sockets etc), it is these type of components that are used in the analysis of power

relationships and type of operations that follows. Second, nothing is known about the relationships between the M&E components suppliers and their manufacturers or raw material providers. This is because MechCo is isolated from the upstream activities by wholesalers and other third parties, enabling them to concentrate on the more important, high value, downstream relationships.

5.2.6 Case 6 Analysis

Figure 5.6 presents a summary of the findings related to PrimeCo’s ready-mixed concrete supply chain.

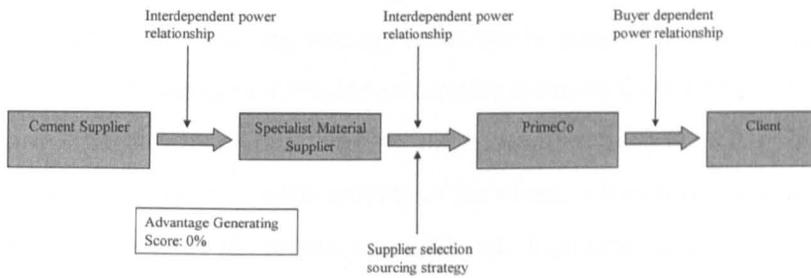


FIGURE 5.6: PrimeCo’s Ready Mixed Concrete Supply Chain Summary of Findings

It can be seen that a *supplier selection* sourcing strategy is deployed which achieves an *advantage-generating score of 0%*. This indicates that the approach used for sourcing ready-mixed concrete does not achieve sustainable competitive advantage. This is consistent with Research Question 1, which asserts that reactive sourcing strategies, such as supplier selection, do not lead to sustainable competitive advantage.

The benefits of the sourcing strategy are that it entails no significant investments and is not resource intensive. This is particularly beneficial to PrimeCo, as it avoids the complexities of allocating investments and resources between the four participating companies. No high-level procurement competence is required, although negotiation

skills were needed due to the size of the project. There were no real drawbacks of the sourcing strategy because robust supplier selection was possible, given the size and duration of the project and the level of procurement expertise and experience available. The supplier also unilaterally implemented operational innovations in concrete-laying techniques and the batching process in order to avoid stringent financial penalties and to take advantage of the substantial financial reward structure. These initiatives are unusual for a reactive sourcing approach and would not have been forthcoming in a different project.

The effect of the sourcing strategy on functionality and cost is positive, and it is seen as successful by key decision-makers in the organisation because the project was delivered on time and to budget. It is not possible to determine the success of the sourcing strategy in financial terms. Although detailed financial records exist, due to the need to appropriate costs and returns among the four consortium members, figures related specifically to the sourcing strategy could not be identified. The overall project achieved above normal returns of 15%. However, this is due to there being only two bidders, PrimeCo being the only UK consortium, a desire on the part of the government to choose a national contractor, and the naivety of the client, rather than any particular sourcing strategy. Essentially the project was high risk, high price and high return. The sourcing strategy was seen as maximising the potential of the project but not in any quantifiable way.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. The ready-mixed concrete supply chain has buyer/supplier *interdependence* power relationships at the *second-tier* and *third-tier* levels, which would facilitate MechCo adopting an upstream proactive sourcing strategy. However, the value generated by a proactive sourcing strategy would need to be shared equally between the supply chain partners, due to the interdependent nature of the power relationships. Downstream, MechCo is in a dominant position in relation to the client (*buyer dependence*) and would therefore be able to appropriate the value of a proactive approach at the *first-tier* level of the supply chain.

At the *first-tier level* of the supply chain, the client has extensive knowledge and understanding about the ownership and operational issues regarding toll motorways but lacks the equivalent level of knowledge regarding the salience and nature of their construction portfolio, the construction supply market and the available technologies from upstream suppliers. As a result, the prime contractor may use information asymmetries and opportunistic behaviour to leverage the client.

Due to the size of the project (£485.5m), this supply chain stage does not display the characteristics of high fragmentation, adversarial approaches, lack of trust and opportunism evident within other sectors of the construction industry. The fact that there were only two bidders for the project shows that while a typical construction company can be created with relatively few resources, and irrespective of the knowledge, understanding and competence of its employees, this is certainly not true within this particular supply chain. Indeed, the fact that the project was to be the UK's largest road contract, involving extensive groundworks, meant that even the largest UK contractor was unwilling to accept the associated risks on its own. As a result, the only option available was to create a coalition of major players with considerable experience with similar projects.

Although there are many clients in the construction market, only the government and a small number of private sector operators exist as buyers in the UK road-building market. However, even though the project is the largest single road contract in the UK, it only represents 1% of the combined turnover of PrimeCo's participating companies. The client is therefore moderately attractive as a customer. The client has a very irregular need to go to the construction market for new road construction and the spend is therefore large, but irregular and unpredictable. PrimeCo gains prestige value by association with the project, but not necessarily with the client, which is seen as an anonymous revenue-generating operation. The client's information on the supply offering is poor. It has limited knowledge and understanding of construction products and services and the strategies of industry players. The client is unaware of the potential scope for standardisation of the design and specification or for prefabrication of certain elements. Furthermore, PrimeCo controls the design and specification. The client has a poorly defined and unclear value proposition with regard to the physical construction activity, being more concerned with the maximisation of revenue from its operating licence.

Although there are many suppliers in the total construction market, only a small number operate in the road-building sector. PrimeCo's offerings are generally not commoditised or standardised, but customised to the specific requirements of the client and the regulatory standards. PrimeCo can therefore offer meaningful differentiation and suppliers are not interchangeable. The client is totally reliant on the construction expertise of PrimeCo, therefore technology rather than price competition differentiates the market. PrimeCo consists of four leading construction firms and is only one of two consortia that were confident enough to bid for this project, demonstrating its market leadership. Its response to new entrants would be very aggressive. The barriers to entry for a project of this size and complexity are huge. Such is the need for size, technical experience, and reputation for delivering similar projects on time and to cost, only one other rival consortium bid for the work. Road construction will always need a prime contractor to design, build and manage the project for the client that does not have the relevant expertise. Substitution is not therefore possible unless the client developed the expertise in-house, which it would not do as it is not its core activity.

At the *second-tier level* of the supply chain, all four companies in the PrimeCo consortium had relationships with different ready-mixed concrete suppliers and had purchasing expertise in this category of spend. However, it was decided that Company C would take the lead in the negotiation with and selection of a ready-mixed concrete supplier. This is because it is a Midlands-based company and therefore has a greater knowledge of the local supply market and has relationships with certain local quarries. The location of a supplier with local facilities is very important in a road-building project of this size and timescale, due to the requirements to transport vast quantities of material quickly from quarry to batching plant and then on to the site.

The main supplier of ready-mixed concrete to this project is a specialist material supplier, which is part of a leading international producer and supplier of materials, products and services used essentially in the construction industry. The group is substantial in its commercial size and geographic spread, with over 30,000 employees operating in 26 countries. It pursues a policy of growth, chiefly around its core products of aggregates, ready-mixed concrete and cement. Since its formation, the specialist material supplier has

grown organically and through acquisition to become, by turnover (approximately £5 billion), the world's fourth largest building materials group.

By output volume, the specialist material supplier is the largest supplier of ready-mixed concrete in the world. A leader in the development of concrete technology, the group is able to design mixes to produce varied strength and consistency in concrete to meet an infinite variety of customer needs and requirements. Its geographical coverage, technical support services and practical experience are unrivalled. The geographical coverage is critical because of the nature of the company's products, i.e. they are not usually transported over long distances because of the considerable delivery costs.

The decision to appoint the specialist material supplier to provide the majority of the ready-mixed concrete for the motorway project was a relatively simple one because of the combination of the two main selection criteria—security of supply and the reduction of environmental impact (minimisation of transportation). The need to have a supply of 2500 to 3000 tonnes (approx 1,000 cubic metres or 150 truck loads) a day meant that there were few alternatives to the localised supply that the company could offer. It should be noted that although price was an important factor, it was deemed secondary to the other selection criteria.

For the motorway project, the contract value for the ready-mixed concrete was approximately £10 million. This figure equates to approximately 0.8% of the specialist material supplier's total UK turnover and 1.5% of total UK revenues from the manufacture of concrete and aggregates. With around 23 million cubic metres of ready-mixed concrete produced annually in the UK, this contract represented less than 1% of total production. However, the share of the local market for ready-mixed concrete and aggregates represented by this project was significantly higher.

Although there are many construction firms acting as prime contractors in the road construction market, there are significantly fewer buyers of ready-mixed concrete and aggregates in the local market (especially for road construction). PrimeCo therefore represents a relatively high share of the local market for road construction materials, which makes it attractive as a customer. PrimeCo has a regular need to source from the ready-mixed concrete market, but there is no certainty about requirements and volumes

for specific types of concrete in the locality. This makes the spend large, regular but unpredictable. The specialist material supplier gains a great deal of prestige value by association with PrimeCo (a consortium of leading construction companies) and the project (the first toll motorway to be built in the UK). PrimeCo's information on the supply offering is very good. It has extensive knowledge and understanding about ready-mixed concrete products and services and the strategies of industry players (including the potential for oligopolistic/cartelistic behaviour). Furthermore, PrimeCo controls the design and specification of the product.

There are only a small number of large suppliers in the ready-mixed concrete market and even fewer operating in the region that are capable of delivering the quantity of products required to the right quality levels and within tight timescales. Although there is a small element of customisation to the specific requirements of the client, the specialist material supplier's offerings are relatively commoditised and standardised. However, it differentiates itself by its size and localised presence which, combined with the oligopolistic and cartelistic nature of the industry, makes interchangeability with other suppliers difficult. Price does not differentiate the market. The means of differentiation are technical expertise and local presence. The supplier is the market leader for ready-mixed products and would respond aggressively to new entrants. There are also major barriers to entry in terms of size and the ownership of site-specific assets such as quarries and processing plants that are required close to construction projects. Substitution is not possible. Ready-mixed concrete will always be required in road-building projects and it would not therefore be possible to redefine design requirements in order to facilitate substitution.

The *third-tier level* of the supply chain involves the supply of the cement required for the manufacture of the ready-mixed concrete. Worth around £3 million, the contract was to supply around 45,000 tonnes of cement for the project. The cement supplier is one of the UK's leading manufacturers of high quality cement. It supplies cement-based products to all sectors of the construction industry, including concrete product makers, major civil engineering contractors, builders' merchants and the larger ready-mix concrete companies, servicing major construction projects, such as the Channel Tunnel and London Underground's Jubilee Line Extension. The manufacturing process requires considerable investment to ensure that the company is best placed to meet the evolving

demands of the UK building materials markets. With such a complicated process, reputation for delivering a consistently high quality product is critical.

Another important factor that impacts upon the dynamics at this supply chain stage is that major international conglomerates own a number of the leading players. As an example of this, the cement supplier is in fact a division of the specialist material supplier which operates in the same supply chain. At the time of the £896 million purchase, the cement supplier was the UK's third-largest cement producer in an industry dominated by the three biggest players.

A large majority of raw materials at similar stages in a construction supply chain are highly commoditised with no manufacturer having a large enough share of the market to directly control prices. Under these circumstances, purchasers with regular expenditures have a potential scope for leverage over, and control of, these dependent suppliers, whose only option for differentiation is to develop a strong reputation and identity within the marketplace, because the product itself cannot provide this. However, this is not the case for this particular supply chain stage because of the size and power of the suppliers, the incestuous relationships, and the lack of true contestation within the marketplace. At both the ready-mixed concrete and the cement stages of the supply chain, there is frequent speculation and investigation regarding price-fixing and the operation of informal cartels.

Although there are a number of ready-mixed concrete manufacturers, only a few are large enough to give access to this type of lucrative project and have localised presence. Furthermore, the specialist material supplier owns the cement supplier, which obviously increases the buyer's importance and its attractiveness as a customer, even though the supplier has a number of other outlets for its products. The buyer has a regular need to source from the commodity raw material market and there is relative certainty and regularity about specific requirements and volumes. This makes the spend large, regular and predictable. Although the cement supplier does not necessarily gain any prestige value by association with the buyer, the fact that it is a subsidiary of the company gives it a vested interest in maintaining the relationship. The buyer's information on the supply offering is very good. The specialist material supplier has extensive knowledge and understanding of the commodity market for the raw materials and is able to make robust comparisons between competing suppliers. Furthermore, the specialist material supplier

in conjunction with the prime contractor controls the design and specification of the product.

There are relatively few suppliers in the raw material market which is dominated by three major players, including the cement supplier for this project. The cement supplier's offerings are highly commoditised and standardised and it cannot therefore offer meaningful differentiation, price being the major differentiator. However, since the specialist material supplier owns the cement provider, there is an obligation to use it as a supplier. Consequently, suppliers are not interchangeable. The cement supplier is one of three market leaders and its response to new entrants would be hostile. Although the raw material product is highly commoditised, there are substantial barriers to entry in terms of the capital investments in quarries and processing plants. Furthermore, the manufacture of ready-mixed concrete currently requires cement as a raw material and substitution is not therefore possible.

5.2.7 Summary of the Reactive Case Evidence

Table 5.2 summarises the findings related to the six reactive cases discussed in the previous sections.

| CASE | DESCRIPTION | ADVANTAGE-GENERATING SCORE | POWER RELATIONSHIP | IS THE STRATEGY SEEN AS SUCCESSFUL? | HOW IS THE STRATEGY MEASURED? | SUSTAINABLE COMPETITIVE ADVANTAGE? |
|------|--|----------------------------|--------------------------------|-------------------------------------|-------------------------------|------------------------------------|
| 1 | Chemicals sourcing at BlendCo (SS) | 0% | Buyer dependent/interdependent | No | Cost reduction | No |
| 2 | Drilling mud sourcing at ExtractCo (SCS) | 11% | Buyer dominant | Yes | Cost reduction | No |
| 3 | Facilities management sourcing at IndirectCo (SCS) | 0% | Buyer dominant | Yes | Cost reduction | No |
| 4 | Low-level legal services sourcing at IndirectCo (SS) | 0% | Buyer dominant | Yes | Cost reduction | No |
| 5 | M&E components sourcing at MechCo (SS) | 0% | Interdependent/independent | Yes | Not measured | No |
| 6 | Ready-mixed concrete sourcing at PrimeCo (SS) | 0% | Buyer dependent/interdependent | Yes | Not measured | No |

Key to sourcing strategies: SCS - Supply chain sourcing
 SS - Supplier selection

Table 5.2: Summary of the Reactive Case Evidence

It can be seen that five of the six cases have a 0% advantage-generating score (the proxy measure of sustainable competitive advantage), while the sixth (drilling mud sourcing at ExtractCo) only achieves an 11% rating. This is consistent with Research Question 1,

which suggests that reactive sourcing strategies do not achieve sustainable competitive advantage.

The drilling mud sourcing strategy (Case 2) is a supply chain sourcing approach, rather than supplier selection. This may lead one to suspect that supply chain sourcing is more advantage-generating than supplier selection, but the findings are inconclusive on this point. The sourcing strategy adopted in Case 2 gains a slightly higher score because it enabled ExtractCo to eradicate the opportunistic behaviour of its well services supplier and turn a buyer dependence power relationship into one of buyer dominance, thus allowing the buyer to appropriate the value from the relationship. Facilities management at IndirectCo (Case 3) also incorporates supply chain sourcing, but in this case only attains a 0% advantage-generating score. Lack of visibility, rather than opportunistic behaviour on the part of the supplier, was the reason for IndirectCo adopting supply chain sourcing and its implementation did not affect the power relationship, which was buyer dominant both before and after the supply chain sourcing approach was adopted. This suggests that the disparity between the advantage-generating score of Case 2 and the others is not due to the type of reactive sourcing strategy adopted, but is the consequence of other contingent factors.

Research Question 2 indicates that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. If this is true then it should be possible for ExtractCo (Case 2), IndirectCo (Case 3 and 4) and PrimeCo (Case 6) to successfully adopt proactive sourcing for their respective supply chains, as they exhibit these type of relationships. BlendCo (Case 1), on the other hand, is constrained by dependence on its intermediate chemicals supplier (who would appropriate the value of proactive sourcing) and MechCo is limited by the independent relationship with its M&E components supplier (there is no incentive to undertake proactive sourcing). A buyer dependent relationship also exists at the first-tier level in PrimeCo's ready-mixed concrete supply chain, but in this case PrimeCo is the supplier to which the client is dependent and the relationship is therefore beneficial to the focal organisation.

The next column in Table 5.2 asks whether the sourcing strategy is seen as successful by key decision-makers in the organization. It is interesting to note that reactive approaches

are not necessarily seen as unsuccessful. Five of the six reactive strategies in the study elicit positive responses in terms of whether they are successful. The only negative response is for the chemicals sourcing at BlendCo (Case 1), which is deemed to be unsuccessful due to cost increases, poor flexibility and lack of innovation from the intermediate chemicals supplier. These behaviours are likely to be a consequence of the buyer dependent power situation that exists rather than an indictment of reactive sourcing per se. The conclusion that reactive sourcing is "bad" should be avoided.

Since none of the participating organizations were able to measure the profitability of specific sourcing strategies, it is important to consider on what basis these reactive strategies are seen as successful. In four out of six cases (1 to 4 inclusive) the success of the sourcing strategy is assessed by the level of cost reductions achieved. This is likely to be why BlendCo's chemicals sourcing is seen as unsuccessful, since it is incurring cost increases. In the other two cases (5 and 6) there are no internal measures in place at all, assessment being based on a general perception as to whether the sourcing strategy helps a project to be delivered on time and within budget. This demonstrates that organizations are not always measuring the contribution of their sourcing strategies and, when they do so, they do not view them as advantage-generating resources that can achieve profitability, but merely as operational techniques to reduce costs. Sourcing strategies are seen as successful merely because they achieve their cost reduction measures.

Finally, it should be noted that, although most of the organizations saw their sourcing strategies as successful, this does not mean that they achieve sustainable competitive advantage, as can be seen from the final column in Table 5.2. None of the sourcing strategies are seen as achieving sustainable competitive advantage by the participating organizations. This is entirely in accordance with their low advantage-generating scores and fully supports Research Question 1, which states that reactive sourcing strategies do not lead to sustainable competitive advantage.

This section has analysed the six reactive cases. The following sections consider the six proactive cases.

5.3. Analysis of the Proactive Case Evidence

5.3.1 Case 7 Analysis

Figure 5.7 presents a summary of the findings related to FoodCo's potato supply chain.

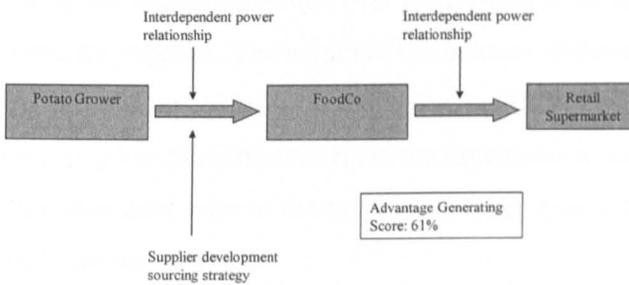


Figure 5.7: FoodCo's Potato Supply Chain Summary of Findings

It can be seen that a *supplier development* sourcing strategy is deployed which achieves an *advantage-generating score of 61%*. The sourcing strategy is seen as unique in relation to FoodCo's competitors and large investments have been made in order to create value that will not deteriorate quickly. However, some of this value has to be shared with the retail supermarket and competitors will eventually be able to replicate the approach. This explains why a higher advantage-generating score is not achieved. However, the findings indicate that the approach used for sourcing potatoes achieves sustainable competitive advantage. This is consistent with Research Question 1, which asserts that proactive sourcing strategies, such as supplier development, lead to sustainable competitive advantage.

The benefits of the sourcing strategy are that it enables the organisation to take control of the supply chain, take out margin, introduce its own ideas and achieve exactly what they want in terms of raw materials. There is reduced wastage and lower overall costs,

although raw material costs are slightly higher. The drawbacks of the sourcing strategy are that FoodCo is locked in to the supplier. However, the company is aware of this risk and has taken steps to minimise it by using a pricing mechanism based on a visible market indicator, building up knowledge about potatoes and working with other suppliers for the 30% of their business which is not tied to the up-market retailer.

Functionality has increased and cost decreased. The success of the sourcing strategy can be determined in financial terms. Expected savings are in the region of £1m per year and, although it is in its early stages, the strategy appears to be on track. The sourcing strategy does not lead to above normal profits over the long-term, as savings must be passed on to the retailer and the supplier. The nature of the industry dictates that survival is the most realistic aim, rather than achieving above normal returns. The sourcing strategy is seen as very successful by key decision-makers in the organisation. Initially there was a question mark over the increased price of the raw material, but once the situation was explained, it was deemed to be successful.

The situation would differ considerably if the item was still being sourced using the *supplier selection* approach. The cheapest price would be pursued and there would not be the same degree of functionality. The standardised potato would not be achievable and this would mean that different processing equipment would be needed. The washing facility would have to be outsourced to an outside supplier, extending and complicating the supply chain. The procurement activities would not be unique and FoodCo would rely purely on leverage. The supplier selection approach would be more transparent to competitors and customers. Profits would be affected by market trends: in a good crop year there would be more profits, but bad crop years would lead to poor profits. Although less effective, the supplier selection approach is, however, a pre-requisite to the supplier development strategy, as the market price needs to be understood before proceeding to work in the long-term with a preferred supplier.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. As there are *interdependent* power relationships at both the *first-tier* and *second-tier* levels of the supply chain, proactive sourcing will be facilitated but any gains will have to be shared with FoodCo's supply chain partners.

At the *first-tier level* of the supply chain, the retailer is a very attractive customer to FoodCo, as its business represents 70% of the latter's turnover. The spend is large, regular and predictable. Although there are seasonal variations, these are fairly easy to forecast. FoodCo gains substantial prestige value by association with the retailer. The retailer's information on the supply offering has been limited, but it is getting better with the recruitment of buyers with good product knowledge. They are also working with consultants to identify areas where they can exert more control over the supply chain. The retailer controls the design and specification.

There are only two suppliers, including FoodCo, who can cope with the volume requirements for the item of spend. FoodCo offers differentiation through developing histories of the ingredients and stories as a marketing tool, but the other supplier also offers something similar. The two suppliers are therefore interchangeable with each other, but not with other players. Price competition differentiates the market. FoodCo is one of two market leaders with an equal share of the market and the competitive nature of the industry dictates that the response to new entrants is very aggressive. Barriers to entry are high and include the retailer's approval process and the processing equipment. The ready meals produced by FoodCo can be sourced from the other supplier, but there is no real substitute for the meals themselves.

At the *second-tier level* of the supply chain, FoodCo is very attractive as a customer, as it accounts for £4m worth of the supplier's business. Not only is the spend large, but it is also regular and predictable. FoodCo operate a single-source policy and the guaranteed business enables the supplier to plan capacity in terms of land allocation. There are seasonal increases in demand, but these can be forecast fairly easily. Furthermore, the seed is cultivated by FoodCo and given to the supplier, which isolates them from any raw material cost fluctuations and shortage problems. The supplier gains prestige value by association with FoodCo, due to the access afforded to the prestigious retailer. Furthermore, FoodCo has very good information on the supply offering, both in terms of production costs and product knowledge, and also controls the design and specification.

There were 6 to 7 suppliers available for this item of spend pre-development, but now only the existing grower can provide the specific requirements. It offers meaningful

differentiation by providing potatoes of a particular size and shape to suit FoodCo's processing equipment. Suppliers are not therefore interchangeable. Price competition differentiates the market. Although different producers operate at different levels of technology, orders are won on price. The grower is one of 6 market leaders, each with an equal share of the market. Each retailer has its own favoured grower.

There are no new entrants and, in fact, growers are going out of business because of the difficult conditions in the UK agricultural industry. Barriers to entry are high, with the main consideration being the retailer's approval process, followed by land requirements. Investment in capital equipment (crop harvesting machinery) is also required but is not such a major concern. Substitution is possible for some supply chains by using dehydrated potato powder, which is made from potato waste, but not for the up-market retailer, as its use leads to lower quality meals. Different varieties of potato are also not possible with FoodCo's dedicated processing equipment.

5.3.2 Case 8 Analysis

Figure 5.8 presents a summary of the findings related to FoodCo's carton & sleeve packaging supply chain.

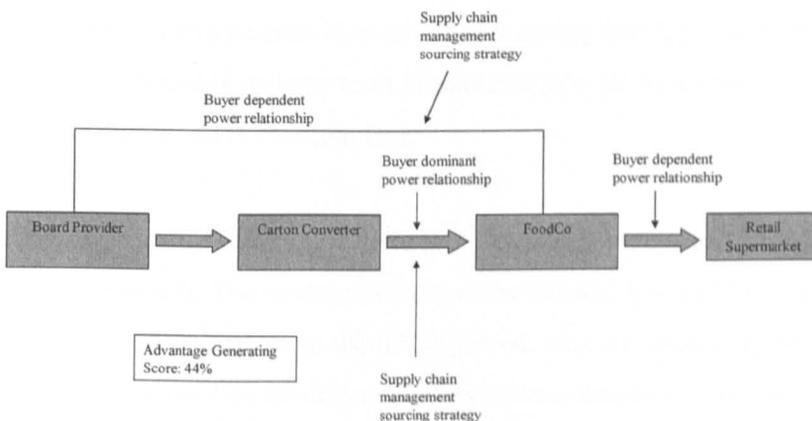


FIGURE 5.8: FoodCo's Carton & Sleeve Packaging Supply Chain Summary of Findings

It can be seen that a *supply chain management* sourcing strategy is deployed which achieves an *advantage-generating score of 44%*. This indicates that the approach used

for sourcing potatoes may achieve some degree of sustainable competitive advantage, but the result is not conclusive. Although the sourcing strategy is seen as unique and competitively superior, with a value that can be appropriated by FoodCo, large investments have not been made. This means that competitors can easily recreate the strategy or find alternative ways of achieving the same benefit, resulting in a value to FoodCo that deteriorates quickly. Research Question 1, which asserts that proactive sourcing strategies such as supply chain management lead to sustainable competitive advantage, is not therefore fully supported.

The benefits of the sourcing strategy are huge cost reductions. The drawbacks are that, if the market price of board goes up, FoodCo may have to bear the increases. They are no longer protected by dealing with the carton converter only. Functionality has increased (on-line printing has been developed due to the long-term nature of the relationship) and cost has decreased dramatically. The success of the sourcing strategy can be determined in financial terms (25% to 50% cost savings over 2 to 3 years). The sourcing strategy is seen as very successful by key decision-makers in the organisation. Savings on cartons and sleeves is the main reason for the business achieving its financial goals.

FoodCo claims that the sourcing strategy leads to above normal profits over the long-term, as the company is paying less than their competitors and the savings achieved do not have to be passed on to the retail customer, who is less concerned with packaging than they are for ingredients. However, the sourcing strategy has not been in existence long enough to assess its long-term impact and internal measures are not in place to quantify its affect on the bottom line.

The situation would differ considerably if the item was sourced using the *supplier selection* approach. The strategy would not be unique, it would be more visible to competitors and no real value would be gained. Any advantages gained would be less long-term and would be quickly eroded by others. Supplier selection is based on market pricing, but the cost savings achieved by dealing directly with the board producer are attributable to the supplier having long-term stability and being able to plan their business.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. If this is true, then the *buyer dependent* power relationship at the first-tier level (where FoodCo is the supplier) and the *buyer dominant* situation at the second-tier level (where FoodCo is the buyer) are both conducive to achieving sustainable competitive advantage. However, the *buyer dependent* power relationship at the third-tier level is problematic and may be a contributory factor to FoodCo only achieving a moderate advantage-generating score.

At the *first-tier level* of the supply chain, the retailer is very attractive to FoodCo, as its business represents 70% of FoodCo's turnover. The spend is large, regular and predictable. There are seasonal variations, but these are fairly easy to forecast. FoodCo gains substantial prestige value by association with the retailer. The retailer is not as knowledgeable about packaging as they are about potatoes and therefore do not have the same level of information regarding product costs. Furthermore, FoodCo controls the design and specification, the retailer only giving a design brief and providing a photograph to go on the packaging.

There are only two suppliers, including FoodCo, who can cope with the volume requirements for the item of spend. FoodCo offers differentiation through developing histories of the ingredients and stories as a marketing tool, but the other supplier also offers something similar. The two suppliers are therefore interchangeable with each other, but not with other players. Price competition differentiates the market. FoodCo is one of two market leaders with an equal share of the market and the competitive nature of the industry dictates that the response to new entrants is very aggressive. Barriers to entry are high and include the retailer's approval process and the processing equipment. The ready meals produced by FoodCo can be sourced from the other supplier, but there is no real substitute for the meals themselves.

At the *second-tier level* of the supply chain, the FoodCo is very attractive as a customer, because the packaging spend is consolidated across the whole group. The group is the largest player in the carton market and a major source of business to the carton converter, albeit not their only source. The spend is large, regular and fairly predictable, although there are seasonal variations, promotions and some de-listing of products, for which the

retailer underwrites 50% of any costs. The carton converter gains prestige value by association with the brand of FoodCo's group and also the up-market retailer. FoodCo's information on the supply offering is very good, with full cost and margin breakdowns, and it also controls the design and specification.

There are very many carton suppliers for the item of spend (409 in the UK alone), ranging from small, single machine operations to very large, multi-site companies. The market is very fragmented, with the top six suppliers constituting 40% of the market. The supplier cannot offer meaningful differentiation. A carton is a carton. Any differentiation revolves around service elements, rather than the product, such as flexibility, delivery and ease of integration. However, these are offered by all companies, therefore suppliers are interchangeable. Price competition differentiates the market. Technology such as digital printing is pursued, but only in as much as its utilisation drives the price down.

There are two market leaders, one of which is used by FoodCo. The response to new entrants is usually hostile, both against one of the main players trying to expand into new business areas or against small players trying to encroach on large players' business. However, there is a suspicion that the market leaders have colluded to keep margins high. The barriers to entry are not high. A carton conversion factory can be set up for £1/2m, including the buildings and machinery. Substitution is possible. Sleeves can be used instead of cartons and cartons can be used instead of sleeves. There is also pre-printed film and a number of other options available.

At the *third-tier level* of the supply chain, FoodCo is attractive as a customer, although it is not the main source of business for the board provider. The spend is large, regular and fairly predictable, although there are seasonal variations, promotions and some de-listing of products, for which the retailer underwrites 50% of any costs. The supplier gains prestige value by association with the brand of the FoodCo group and also the up-market retailer. FoodCo's information on the supply offering is very good, with full cost and margin breakdowns, and it also controls the design and specification.

There are a fair number of suppliers (board mills) for this item of spend, but the numbers are declining. The supplier cannot offer meaningful differentiation and suppliers are therefore interchangeable. Price competition differentiates the market, there are no

market leaders and the response to new entrants is hostile. There are high barriers to entry, as pulp processing is a difficult process with expensive capital investment requirements. Substitution is not possible. If there is a requirement for board, nothing else can be used.

5.3.3 Case 9 Analysis

Figure 5.9 presents a summary of the findings related to BlendCo’s energy supply chain.

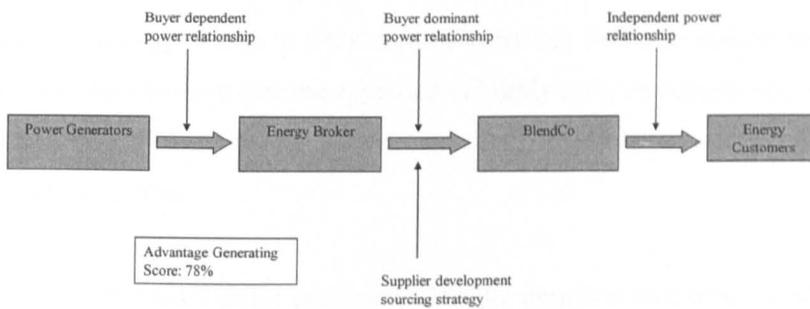


FIGURE 5.9: BlendCo’s Energy Supply Chain Summary of Findings

It can be seen that a *supplier development* sourcing strategy is deployed which achieves an *advantage-generating score of 78%*. The sourcing strategy is seen as unique and competitively superior with a value that can be appropriated by BlendCo and that will not deteriorate quickly. Large investments have been made in the sourcing strategy and it is not easily substituted by an alternative approach. Although competitors can identify the value of the sourcing strategy and would know how to recreate it, the approach used for sourcing energy achieves sustainable competitive advantage. This is consistent with Research Question 1, which asserts that proactive sourcing strategies, such as supplier development, lead to sustainable competitive advantage

The benefits of the sourcing strategy are that it enables the organisation to take control of the elements of the supply chain that matter through power and leverage. The drawbacks of the sourcing strategy are that by developing the supplier it becomes bigger and

stronger and BlendCo becomes relatively less important to it, thus making it difficult to exert the same amount of leverage in the future. This is the typical supplier development dilemma. Functionality is continuously being improved by working closely with the supplier and there is more control over costs. The aim is to beat the market. Costs are very much related to market prices.

The success of the sourcing strategy can be determined in financial terms. Three different benchmarks are used: (i) the market price; (ii) what would be achieved if no strategy was adopted; and (iii) the internal company budget and targets. The sourcing strategy is said to lead to above normal profits over the long-term, as BlendCo are in the top quartile performance in relation to their competitors, but this is really a statement of the profitability of the company rather than the sourcing strategy itself. However, the sourcing strategy is seen as very successful by key decision-makers in the organisation, although they believe that the approach is highly risky in comparison to just using market contestation. This causes some concern to senior managers, who would be willing to risk less and gain less.

The situation would differ considerably if the item was still being sourced using the *supplier selection* approach. The supplier and BlendCo have developed together and more has been achieved in this way. The open electricity market was completely new in 1998 (previously it was a fixed pool price) and industry expertise was of paramount importance in order to operate effectively in it. This expertise was not widely disseminated and working closely with an experienced broker was essential.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. If this is true, then the *buyer dominant* situation at the *second-tier* level of the supply chain (where BlendCo is the buyer) is conducive to achieving sustainable competitive advantage and may be a contributory factor to the 78% advantage-generating score achieved. However, if BlendCo wished to extend the existing supplier development approach to one of supply chain management, this may not be profitable. This is because an *independent* power relationship (where there is no incentive to work together) exists at the *first-tier* level and a *buyer dependent* power relationship (where the power generator

may appropriate the value produced from a collaborative relationship) exists at the *third-tier* level.

At the *first-tier level* of the supply chain, an individual customer is not likely to be particularly attractive to BlendCo, since there are many possible customers for their electricity. The spend from each customer is likely to be relatively small, irregular and unpredictable. BlendCo does not gain any prestige value by association with the customers. The buyers' information on the supply offering is very good, since the energy market is transparent and commoditised. Furthermore, the design and specification is an industry standard.

There are many other suppliers of electricity besides BlendCo. They cannot offer meaningful differentiation and suppliers are therefore interchangeable. Price differentiates the market, with buyers constantly searching for cheaper electricity. There are no market leaders and the market is well contested. Barriers to entry are fairly low and set up costs are negligible. Gas can be substituted for oil, but electricity will always be required.

At the *second-tier level* of the supply chain, BlendCo is very attractive as a customer, as their business represents 55% of the broker's turnover. The spend is large (£65m per annum), regular and predictable. The broker takes a percentage of the price that BlendCo pays for its energy. The broker gains substantial prestige value by association with BlendCo, who is the market leader of industrial customers dealing in energy in this way, as well as being a high-profile organisation with representation on a number of national trade federation boards. BlendCo's information on the supply offering is very good. Energy is a very simple commodity bought on the basis of kilowatt per hour, making the purchase very transparent. The design and specification is an industry standard.

There are four different brokers that BlendCo could use. The contract is tendered regularly and a supplier chosen on strategic value, not just cost. The existing broker does offer differentiation and this is how they won the contract. The differentiation is unique to BlendCo and therefore represents a major competitive advantage. For this reason, BlendCo is not able to divulge the nature of the differentiation, although it is related to

technology. The suppliers are not interchangeable at the moment, due to the current broker's differentiation, but the others are sure to catch up in time, perhaps within a year.

Price is comparable across the suppliers, whereas technology differentiates the market. The current broker is the market leader, but has to share new ideas and initiatives with BlendCo, due to the latter's powerful position and contract stipulations. Barriers to entry are fairly low, as almost anyone can set up as a broker. The key factor is having the industry knowledge and expertise to know how the energy market works. Set up costs are negligible. Gas can be substituted for oil, but electricity will always be required.

At the *third-tier level* of the supply chain, the broker is not very attractive as a customer. The broker is small and the generators are huge. Furthermore, the amount of spend is very small. The supplier does not gain any prestige value by association with the broker and the broker has very good information on the supply offering, as it is a commodity market and very transparent. Industry standards control the design and specification.

There are now very few mainstream power generators. There are renewable energy suppliers, but these have guaranteed income from government subsidies and do not therefore compete in this market. The suppliers cannot offer meaningful differentiation because of the commodity nature of the unit of energy. Price competition differentiates the market at this stage of the supply chain. Two major players dominate the power generation market and barriers to entry in terms of capital expenditure are very high, with multi-millions of pounds needed to build power generation plants. There is no real substitute for the electricity that is required by industrial buyers as their processes are fully geared to this particular form of energy and cannot easily be adapted to an alternative.

5.3.4 Case 10 Analysis

Figure 5.10 presents a summary of the findings related to ExtractCo's life-of-field seismic imaging supply chain.

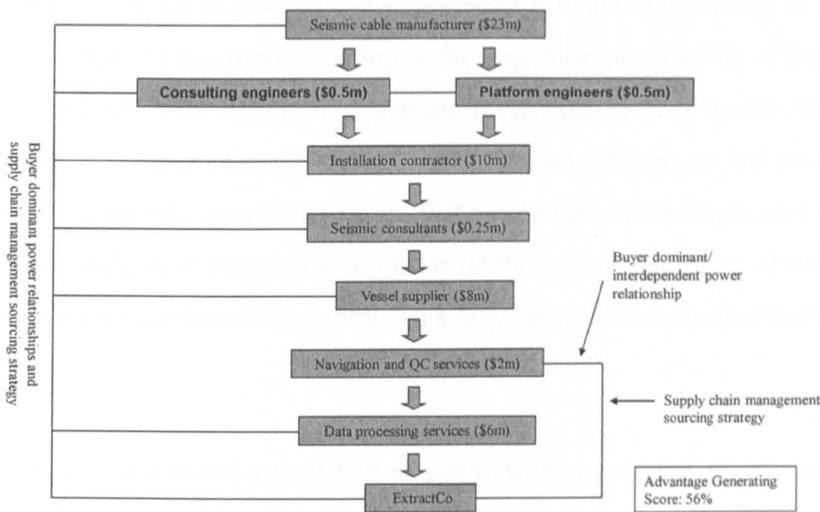


FIGURE 5.10: ExtractCo’s Life of Field Seismic Imaging Supply Chain Summary of Findings

It can be seen that a *supply chain management* sourcing strategy is deployed which achieves an *advantage-generating score of 56%*. The sourcing strategy is seen as unique in relation to competitors, although the uniqueness is due to the fact that no other organisation is currently undertaking life-of-field seismic imaging rather than because of the sourcing strategy itself. Large investments have been made in the sourcing strategy, the value of which can be appropriated by ExtractCo over the life of the field, thus making it durable. Due to the emergent nature of the technology, an alternative sourcing strategy would not have been appropriate. However, if large competitors were to enter this market, they would be able to identify the value of the sourcing strategy and recreate it fairly easily. The findings are consistent with Research Question 1, which asserts that proactive sourcing strategies such as supply chain management lead to sustainable competitive advantage, although the result is not conclusive.

The benefits of the sourcing strategy are that ExtractCo is able to control all aspects of the project and ensure that only the best sub-contractors are chosen, as opposed to the cheapest. It has enabled ExtractCo to enter into tailored supply chain relationships with each of the different suppliers. The drawbacks of the sourcing strategy are the internal management time involved and the relationship management commitment needed. Furthermore, ExtractCo is totally responsible for any problems and issues that arise. Functionality is increased but the affect on cost is neutral.

It is not possible to determine the success of the sourcing strategy in financial terms, although it is seen as contributing to the long-term profitability of the firm by enabling more effective utilisation of oil and gas reservoirs. Most of the key decision-makers are of the opinion that the adoption of supply chain management has resulted in a better product, but this cannot be proven. If the supplier selection approach had been adopted, there would have been more emphasis on the cost management of suppliers rather than their track record and reputation. This may have led to a cheaper outcome, but an inferior product.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. If this is true, then the *buyer dominant* power relationship that ExtractCo has with all its suppliers is conducive to optimising sustainable competitive advantage. However, this is not entirely borne out by the moderate advantage-generating score. This may be due to a lack of commitment to the sourcing strategy. ExtractCo's preferred sourcing strategy was supplier selection using a first-tier supplier, but this was not possible due to the prevailing circumstances. ExtractCo does not pursue sourcing strategies with a view to them being advantage-generating, and they are therefore unlikely to be so.

ExtractCo is very attractive as a customer. It is a large, reputable, blue-chip, multinational organisation. Most suppliers (except the consulting engineers and platform engineers) only work within the oil and gas industry, so have to be interested in ExtractCo as a customer, since they are one of the largest global players in the industry.

The nature of the spend in terms of size is that it is a reasonably large portion of business for all the suppliers. In terms of regularity, for most suppliers (the seismic cable manufacturer, consulting engineers, platform engineers, installation contractor, and seismic consultants) this was one-off project for 12-18 months. For the other suppliers (for the vessel, navigation and QC services, and data processing services) it is also a one-off project, but their involvement is likely to be for the life of the field (7 to 8 years). Predictability is low. This is more of a field trial to establish if the life of field approach can deliver business benefits and whether it will be repeated depends on the outcome. However, suppliers are hoping to be first movers by getting involved in this leading-edge

work and thus being in a good position for any future projects. The suppliers gain an enormous amount of prestige value by association with the buyer and with the project.

A rigorous competitive tendering exercise for most contracts ensured that ExtractCo's information on the supply offering was good and that a market price was achieved. Lower value contracts (with the consulting engineers, platform engineers and seismic consultants) were single-sourced using tried and tested organisations that had been used in the past. There was joint development of the design and specification, but ExtractCo had ultimate control.

There were potentially five or six alternative suppliers for the seismic cable manufacturer, several for the consulting engineers and platform engineers, five for the installation contractor, three or four for the seismic consultants, several for the vessel supplier, two or three for navigation and QC services, and four or five for data processing services. The industry is fairly consolidated, thus resulting in a relatively small pool of suppliers, but in every case there is more than one. There is some differentiation between suppliers on quality, cost and project management capability (which can all be identified through the tendering process), but they all offer fairly similar products and services. Suppliers are therefore interchangeable. The navigation and QC services provider is the only eminent, unique supplier which ExtractCo has no real alternative to, due to their systems and expertise in the niche, high-precision navigation sector of the off-shore industry. Technology is a given and price competition therefore differentiates the market. The markets are well-contested with, apart from the navigation and QC services supplier, no clear leaders. There is no evidence to suggest that suppliers respond aggressively to new entrants.

The main barrier to entry for seismic cable manufacturers, installation contractors and vessel suppliers is the high capital costs involved for start-ups (\$10m for a vessel; \$50m for cable installation equipment). For the consultants and service providers it is technical expertise, which is in short supply (10 people with scarce skills required for each project). Although this range of activities had to take place once the life of field approach was decided upon, it would have been possible to revert to more traditional seismic imaging, which would have reduced the commitment and technical expertise required from the suppliers. Substitution is therefore possible to some degree.

5.3.5 Case 11 Analysis

Figure 5.11 presents a summary of the findings related to IndirectCo's accounts payable supply chain.

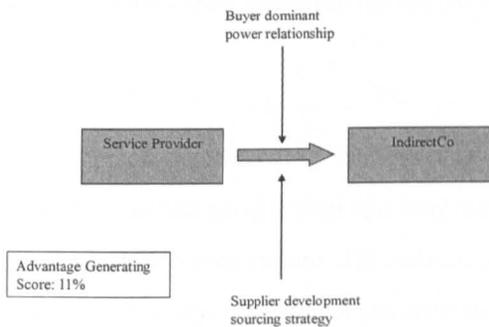


FIGURE 5.11: IndirectCo's Accounts Payable Supply Chain Summary of Findings

It can be seen that a *supplier development* sourcing strategy is deployed which achieves an *advantage-generating score of 11%*. Although large investments have been made in the sourcing strategy, it is not seen as unique, competitively superior, durable or inimitable. IndirectCo are not concerned with these issues as the aim of the supplier development exercise is to make the market more competitive and transparent, not to create competitive advantage. The same can be said for appropriability. IndirectCo is not concerned with fully appropriating value, but is willing to share it with the supplier in order for them to increase its competence and create a healthier market.

Overall, the sourcing strategy only achieves an advantage-generating score of 11%. This indicates that the approach used for sourcing accounts payable does not achieve sustainable competitive advantage. This is not consistent with Research Question 1, which asserts that proactive sourcing strategies such as supplier development lead to sustainable competitive advantage. The reason for this could be that accounts payable is non-strategic inasmuch as it does not directly impact on the ability of the firm to generate revenue and hence profit. It is possible, therefore, that proactive sourcing strategies are

only advantage-generating when dealing with strategic categories of spend, but not in non-strategic situations.

The benefits of the sourcing strategy are the creation of a more competitive market and the accumulation of organisational learning that can be applied to other sourcing situations. The drawback of the sourcing strategy is that IndirectCo is dependent on a two-supplier base, although this is better than being reliant on only one. Costs have been reduced, both initially and year on year, although this is now levelling off. Labour arbitrage or new technology may continue these cost reductions. Functionality has remained the same.

It is possible to determine the success of the sourcing strategy in financial terms, but it does not lead to above normal profits over the long-term as it is a non-strategic purchase with a minimal affect on the bottom line. The sourcing strategy is seen as successful by key decision-makers in the organisation. If the service was sourced using the supplier selection approach, there would be considerably less investment in resources. Although it is not a strategic purchase, accounts payable has huge potential to affect the reputation of the firm, so it is a serious concern and cannot be treated like a more commoditised service such as travel. Quality assurance processes are much more stringent. This is particularly true in relation to the potential off-shoring element of the service provision.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. If this is true, then the *buyer dominant* power relationship that ExtractCo has with its accounts payable service provider is conducive to achieving sustainable competitive advantage. This is not, however, borne out by the low advantage-generating score. Possible reasons for this are discussed in Section 5.3.7.

IndirectCo is very attractive as a customer, as it is a blue chip company. The spend is large and growing in size, regular and predictable. The contract is worth \$150m per annum and will run for 7 to 10 years. This represents a major source of outsourced service business for the new supplier. The supplier gains a high degree of prestige value by association with the buyer, the relationship presenting a great level of marketing opportunity.

The buyer's information on the supply offering is excellent. IndirectCo knows exactly what the suppliers' margins are by using cost to serve modelling techniques. Furthermore, the service was previously conducted in-house, therefore internal costs are readily available. However, IndirectCo does not just compare a quoted price with the cost of in-house provision, but insists on cost transparency during discussions and then works out what is seen as a fair return for the supplier. IndirectCo controls the design and specification.

There are two major suppliers for the item of spend, the current supplier and the previous incumbent. There are also a number of other UK providers and IndirectCo is also investigating independent alternatives in India. The two majors can offer meaningful differentiation by their size and diversity of offer. Back-up of data can be stored globally in various locations, thus achieving security of supply, but at the same time issues can be dealt with personally at a local level. The two majors, however, are interchangeable with each other. The dominance of embedded ERP systems dictates that technology is an important differentiator in the market, as they require highly specialised application support. There is no disruptive technology at the moment but this may change. More distributed systems would reduce the importance of technology, but price will never be the only differentiator, since it must always be considered with the service element.

The new service provider has an Indian off-shoot and this is being looked at with a view to reducing costs. The gains from labour arbitrage can be huge (70% cost reductions) and cultural differences should not matter for such a back-office activity, but there is also a downside. These are one-off savings and, since they are so substantial, may prevent continuous improvement initiatives in terms of standardisation and process optimisation being pursued.

The supplier is one of the two market leaders already mentioned, but there is no evidence to suggest that they would respond in a hostile fashion to new competition. The barriers to enter the market are not high, but they are to deal with IndirectCo, given its volume requirements and its need for a 'total solution' service. Substitution is possible by taking the service back in-house. Outsourcing has created a standardised, optimised process that could now be managed internally by utilising 'plug and play' suppliers. IndirectCo are

considering this option. They may not actually do it but there is always this threat hanging over the supplier.

5.3.6 Case 12 Analysis

Figure 5.12 presents a summary of the findings related to IndirectCo's high-level legal services supply chain.

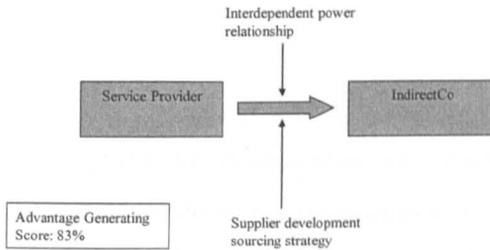


FIGURE 5.12: IndirectCo's High Level Legal Services Supply Chain Summary of Findings

It can be seen that a *supplier development* sourcing strategy is deployed which achieves an *advantage-generating score of 83%*. Large investments have been made in the sourcing strategy, which is seen as unique, durable, and difficult to replicate. An alternative approach is not feasible for such a strategic area of spend. However, the value of the sourcing strategy has to be shared with the supplier and large competitors are able to adopt a similar approach. Overall the findings indicate that the approach used for sourcing high-level legal services achieves sustainable competitive advantage. This is consistent with Research Question 1, which asserts that proactive sourcing strategies such as supplier development lead to sustainable competitive advantage

The benefit of the sourcing strategy is that the best expertise is available immediately and when required. The drawbacks of the sourcing strategy are the high fees paid and the fact that these are not market-related. Functionality in terms of quality and responsiveness is excellent. The fees are high, but the service is seen to be cost effective as it saves

hundreds of millions of dollars in reduced litigation and effective mergers and acquisitions, although this is not measurable.

The sourcing strategy has an affect on the firm's profitability over the long-term. IndirectCo's parent company has doubled in size over the last five years through acquisitions and mergers. This has enabled it to generate returns over and above those that could have been achieved through organic growth. The sourcing strategy is seen as very successful by key decision-makers in the organisation. The company would not have been able to expand so successfully without these legal support services. It would not be possible to source the service using the supplier selection approach, as a proactive, relationship-based strategy is required for high-level legal work due to the strategic nature of the spend.

Research Question 2 asserts that proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist. As an *interdependent* power relationship exists between IndirectCo and the service provider and there is an 83% advantage-generating score for the sourcing strategy, then this research question is supported as well.

IndirectCo is very attractive as a customer, as it is a blue chip company, and the spend is large, regular and predictable. The service provider gains a high degree of prestige value by association with the buyer, the relationship presenting a substantial level of marketing opportunity. IndirectCo controls the design and specification of the service and has good information on the supply offering and the supply base.

There are a very limited number of suppliers who can cope with the volume and intensity of IndirectCo's requirements for this item of spend. The supplier offers differentiation in terms of trust and commitment built up over many years of working with IndirectCo and suppliers are not therefore interchangeable. Proven expertise and service provision differentiates the market rather than price. The service provider is one of the leading suppliers in the market and the nature of the industry dictates that the response to new entrants is aggressive. Barriers to entry are high and include the level of expertise and global reach required as well as reputation and status. There is no real substitute for this

type of high-level legal services work in a company with the size, reach and complexity of IndirectCo's parent.

5.3.7 Summary of the Proactive Case Evidence

Table 5.3 summarises the findings related to the six proactive cases discussed in the previous sections.

| CASE | DESCRIPTION | ADVANTAGE-GENERATING SCORE | POWER RELATIONSHIPS | IS THE STRATEGY SEEN AS SUCCESSFUL? | HOW IS THE STRATEGY MEASURED? | SUSTAINABLE COMPETITIVE ADVANTAGE? |
|------|---|----------------------------|--|-------------------------------------|-------------------------------|------------------------------------|
| 7 | Potato sourcing at FoodCo (SD) | 61% | Interdependent | Yes | Cost reduction | Yes |
| 8 | Carton & sleeve packaging sourcing at FoodCo (SCM) | 44% | Buyer dependent/ buyer dominant | Yes | Cost reduction | No |
| 9 | Energy sourcing at BlendCo (SD) | 78% | Independent/ buyer dominant/ buyer dependent | Yes | Cost reduction | Yes |
| 10 | Life of field seismic imaging sourcing at ExtractCo (SCM) | 56% | Buyer dominant | Yes | Not measured | Yes |
| 11 | Accounts payable sourcing at IndirectCo (SD) | 11% | Buyer dominant | Yes | Cost reduction | No |
| 12 | High-level legal services sourcing at IndirectCo (SD) | 83% | Interdependent | Yes | Not measured | Yes |

Key to sourcing strategies: SCM - Supply chain management
SD - Supplier development

Table 5.3: Summary of the Proactive Case Evidence

According to the two research questions, a proactive sourcing strategy combined with buyer dominant or interdependent power relationships should achieve sustainable competitive advantage. This is supported by referring to the case with the highest advantage-generating score, that of high-level legal services sourcing at IndirectCo (Case 12). This exhibits both proactive sourcing and interdependent power relationships and achieves an 83% advantage-generating score (the proxy measure used for sustainable competitive advantage). According to the interview responses, the only factors that prevent the sourcing strategy from achieving a 100% score are: (i) the value of the sourcing strategy has to be shared with the supplier since there is an interdependent relationship, and (ii) the sourcing strategy is not superior to that of large competitors who are able to adopt a similar approach.

The second-highest advantage-generating score is achieved by BlendCo's energy sourcing (Case 9). The focal power relationship (between BlendCo and the energy

broker) is one of buyer dominance, so this characteristic appears to be favourable, and BlendCo does indeed achieve a 78% advantage-generating score. According to the interview responses, the sourcing strategy does not achieve a 100% score because: (i) competitors are able to identify the value of the sourcing strategy and (ii) they know how to recreate it. This is because the market is transparent and commoditised, BlendCo is new to it, and the upstream power generators are very powerful.

There are clear differences between BlendCo's energy sourcing and IndirectCo's high-level legal services case. In the latter, IndirectCo operates in a closed, customised and mature market without any unfavourable upstream supplier relationships, and this may explain the difference in the two scores. BlendCo's aim is to obtain an energy supply license which will enable it to control the whole supply chain and close off the market to competitors, thus protecting the value of their sourcing strategy. Once this has been achieved, BlendCo's energy sourcing strategy may well achieve a higher advantage-generating score than IndirectCo, because the latter has to share the value of its sourcing strategy with its legal services suppliers.

The third highest advantage-generating score is achieved by FoodCo's potato sourcing (Case 7). Interdependent power relationships exist, which are positive characteristics, but the advantage-generating score is only 61%. Interview responses indicate that: (i) competitors are able to identify the value of the sourcing strategy; and (ii) they know how to recreate it. This is the same as BlendCo's situation. There are also two other negative factors for FoodCo: (iii) the sourcing strategy can be substituted by alternatives; and (iv) its value has to be shared with suppliers and customers. FoodCo operates in a highly competitive market with a powerful retail supermarket customer and an integrated potato supplier, and these factors may have an effect on the advantage-generating potential of the sourcing strategy, as the value generated will have to be shared. Whereas BlendCo's energy sourcing has a focal relationship of buyer dominance, FoodCo's potato sourcing has interdependent power relationships. This less favourable power situation may explain the discrepancy between the two scores.

Another point to consider is that both IndirectCo and BlendCo are consistently first-quartile performers in terms of profit margin (refer to Table 5.7 in Chapter 5), whereas FoodCo is mainly in quartile 4. This is to say that, at an organizational level, both

IndirectCo and BlendCo achieve sustainable competitive advantage, but FoodCo does not. Given that FoodCo does not achieve sustainable competitive advantage as a company, it is difficult to see how one of its sourcing strategies can do so to any great extent. This may be another explanation for the difference between FoodCo's advantage-generating score and those of IndirectCo and BlendCo, even though the sourcing strategies are the same. Taking this further, it could be argued that the advantage-generating score does not really indicate whether a sourcing strategy achieves sustainable competitive advantage, but is more of an assessment of its potential to do so. FoodCo's potato sourcing, for example, may have the potential to achieve sustainable competitive advantage but may not do so due to the poor performance of the company.

The fourth proactive sourcing strategy to be considered is ExtractCo's life of field seismic imaging approach (Case 10). This has buyer dominant power relationships, but only a moderate advantage-generating score of 56%. One negative factor identified by the interview respondents is that: (i) the uniqueness of the sourcing strategy is not due to its development process over time, but simply because no other organisation is currently undertaking life of field seismic imaging. Furthermore, if large competitors were to enter this market: (ii) they would be able to identify the value of the sourcing strategy; and (iii) they could recreate it fairly easily, thus: (iv) it is not seen as competitively superior.

The moderate advantage-generating score achieved by the life of field seismic imaging sourcing strategy may be due to a lack of commitment to the approach. The supply chain management approach was not a deliberate choice, but a reaction to prevailing circumstances. ExtractCo's preferred sourcing strategy was supplier selection using a first-tier supplier, but this was not possible. The interview respondents did not see sourcing strategies as having a direct impact on business performance within the oil and gas exploration and extraction industry, as there are other factors (such as exploration/drilling rights and actual world prices) that have a more profound effect on the bottom line. ExtractCo does not therefore pursue sourcing strategies with a view to them being advantage-generating.

The four cases discussed so far (Cases 12, 9, 7, and 10) can be seen as achieving sustainable competitive advantage (or having the potential to do so), because they all achieve advantage-generating scores of more than 50%. Large investments have been

made in all four sourcing strategies, and they are seen as unique and durable. However, only IndirectCo's high-level legal services sourcing is said to also be opaque and thus inimitable. BlendCo's energy sourcing, FoodCo's potato sourcing, and ExtractCo's life of field seismic imaging sourcing are all said to be transparent and therefore easier for competitors to replicate. This is due to the contingent market circumstances that the sourcing strategies operate in, and may be the reason why they achieve lower scores.

Whereas Cases 12, 9, 7, and 10 achieve advantage-generating scores in excess of 50%, the remaining three cases do not, and it is therefore reasonable to assert that they do not achieve sustainable competitive advantage. FoodCo's carton and sleeve packaging sourcing (Case 8) is the first of these to be discussed. It only achieves a 44% advantage-generating score and the possible reasons are discussed below.

It has already been seen that FoodCo's potato sourcing (Case 7) achieves an advantage-generating score of 61%, whereas the carton and sleeve packaging sourcing (Case 8) only attains 44%. The organizational conditions will of course be the same for both sourcing strategies, since they operate within the same company. However, the power relationship is interdependent for potato sourcing and buyer dependent with the board producer for carton and sleeve packaging sourcing. This implies that the difference in the advantage-generating scores is attributable to disparity in the power relationship. A power relationship premium has already been identified previously when comparing Cases 7 and 9 (interdependent as opposed to buyer dominant). This appears to be confirmed by comparing Cases 7 and 8 (interdependent as opposed to buyer dependent). Once again, an improvement in relative power seems to produce an advantage-generating premium.

As well as the unfavourable power relationship, another concern with the carton and sleeve packaging sourcing is that, according to the interview responses, large investments have not been made in it. Supply chain management, which is the approach adopted by FoodCo for carton and sleeve packaging sourcing, is a resource intensive strategy requiring large investments. However, if FoodCo were to make such investments in this strategy, there is the danger that the board producer will appropriate the value generated. The board producer is in a dominant position over FoodCo and great care needs to be taken to avoid supplier opportunism. This demonstrates the risks involved with proactive

sourcing strategies, where the nature of the relationship can change from buyer dominant to buyer dependent as the development process takes place and lock-in increases.

Interestingly, FoodCo asserts that the sourcing strategy used for carton and sleeve packaging does lead to sustainable competitive advantage, even though this is not borne out by the 44% advantage-generating score. The reason quoted for the confidence in the competitiveness of the strategy is that it has led to cost savings and therefore profitability. However, although the cost savings have been recorded (25% to 50% over 2 to 3 years), it is not possible to substantiate the profitability aspect. Furthermore, 2 to 3 years is not necessarily long-term (5 years is the measure used in this study) and the strategy may not therefore be sustainable. The original single-source strategy with the carton converter was an inappropriate strategy which led to opportunistic behaviour on the part of the supplier. Some of the savings achieved by the new supply chain management strategy may therefore be attributable to the ineffectiveness of the original strategy and may not therefore be sustainable in the long-term.

A further variable needs to be considered when looking at IndirectCo's accounts payable sourcing (Case 11). This sourcing strategy has a buyer dominant power relationship (a positive characteristic), but only an 11% advantage-generating score. Accounts payable, in line with most of the spend categories within the responsibility of IndirectCo, is non-strategic inasmuch as it does not directly impact on the ability of the firm to generate revenue and hence profit, therefore it cannot be advantage-generating. This is despite the fact that IndirectCo's parent company is consistently in the first quartile in terms of profitability. It is possible, therefore, that proactive sourcing strategies are only advantage-generating when dealing with strategic categories of spend, but not in non-strategic situations. This is supported in the case study analysis by comparing IndirectCo's high-level legal services sourcing (a strategic purchase which achieved an 83% advantage-generating score) with its non-strategic accounts payable score of 11%.

The above conclusion may lead one to suspect that the wrong sourcing strategy has been adopted for the accounts payable supply chain and, indeed, in other situations where supplier development is being used for non-strategic purchases. However, this is not necessarily the case. Procurement practices within the organisation have been under-developed in the past and non-rational decision-making has led to the supply markets in

which IndirectCo operate becoming stagnant and complacent. As procurement decision-making becomes more rational, IndirectCo appears to be using supplier development as a short-term tactic rather than a strategy, with the long-term aim of developing a healthy, competitive market. Once this has been established, a supplier selection approach, or in some cases supply chain sourcing, can be adopted based on market contestation, which will be entirely appropriate given the non-strategic nature of the majority of the organisation's external expenditure. Proactive sourcing strategies are therefore being utilised by IndirectCo as an effective, short-term tool with which to achieve their long-term aims and objectives.

One final point should be mentioned in relation to Table 5.3. It can be seen that IndirectCo's high-level legal services sourcing strategy and ExtractCo's life of field seismic imaging sourcing strategy are not measured at all and the other cases are measured on the ability of the sourcing strategy to achieve cost reductions rather than profitability. If the objective of a sourcing strategy is not necessarily to be profitable, then it is unlikely to fulfil its potential in terms of sustainable competitive advantage. It could be argued that if more attention were paid to the ability of sourcing strategies to generate profitability, their ability to be advantage-generating should improve, although they are still likely to be constrained by their contingent commercial and operational circumstances.

5.4. Analysis of the Advantage Generating Factors

The previous section gave a summary of the findings related to the six proactive sourcing strategies. Four of the cases achieve advantage-generating scores of more than 50% and are therefore deemed to have the potential to achieve sustainable competitive advantage. However, none of the cases attained a 100% advantage-generating score. The aim of this section is to analyse the factors that appear to affect the advantage-generating scores and thus have an influence over whether a sourcing strategy leads to sustainable competitive advantage.

Table 5.4 shows the six proactive cases in descending order of advantage-generating score along with a summary of the factors that affect the result. The power relationship

factor is the moderating variable that was identified during the literature review and incorporated into the research questions. The factors shown in the final column are the intervening variables that were identified during the survey. Factors that have a positive effect on the advantage-generating score are shown in bold and those that have a negative affect are indicated in italics.

| CASE | SCORE | POWER RELATIONSHIP | INTERVENING FACTORS |
|--|-------|------------------------|--|
| (12) High-level legal services sourcing at IndirectCo | 83% | Interdependent | <ul style="list-style-type: none"> • Closed, customised and mature market • Corporate sustainable competitive advantage • <i>No performance measures</i> |
| (9) Energy sourcing at BlendCo | 78% | Buyer dominant | <ul style="list-style-type: none"> • Corporate sustainable competitive advantage • <i>Open, transparent and new market</i> • <i>"Cost reduction" performance measure</i> |
| (7) Potato sourcing at FoodCo | 61% | Interdependent | <ul style="list-style-type: none"> • <i>Highly competitive, low margin market</i> • <i>Poor corporate performance</i> • <i>"Cost reduction" performance measure</i> |
| (10) Life of field seismic imaging sourcing at ExtractCo | 56% | Buyer dominant | <ul style="list-style-type: none"> • Corporate sustainable competitive advantage • <i>Lack of commitment to the sourcing strategy</i> • <i>No performance measure</i> |
| (8) Carton and sleeve packaging sourcing at FoodCo | 44% | <i>Buyer dependent</i> | <ul style="list-style-type: none"> • <i>Poor corporate performance</i> • <i>Lack of investment in the sourcing strategy</i> • <i>"Cost reduction" performance measure</i> |
| (11) Accounts payable sourcing at IndirectCo | 11% | Buyer dominant | <ul style="list-style-type: none"> • <i>Non-strategic spend</i> • <i>"Cost reduction" performance measure</i> |

Positive factors in bold Negative factors in italics

Table 5.4: Summary of Advantage Generating Factors

Table 5.4 gives an indication of the factors that enable an organization to achieve sustainable competitive advantage. The existence of either buyer dominant or interdependent power relationships was originally identified as a contributory factor and the survey evidence suggests that this may be true. All four cases with above-average advantage-generating scores display these characteristics. Furthermore, looking at the counterfactual evidence, Case 8 displays a buyer dependent power relationship and does not attain a score over 50%.

However, there appears to be an intervening factor that over-rides the assertions regarding power relationships. Referring to Case 11, which has a buyer dominant power relationship but only achieves an 11% advantage-generating score, the nature of the spend appears to be an over-riding consideration. Case 11 is concerned with accounts payable sourcing and it makes sense that a sourcing strategy that deals with non-strategic

purchases that do not have a direct impact on the bottom line will not be advantage-generating.

Other major limiting factors that were identified during the survey are: a lack of commitment to the sourcing strategy (Case 10); and a lack of investment in the sourcing strategy (Case 8). Finally, the nature of the market, the overall profitability of the company, and the performance measure used for the sourcing strategy seem to have a role to play in a number of the cases. All of these variables appear to have an influence on whether a sourcing strategy leads to sustainable competitive advantage.

In conclusion, the two research questions assert that proactive sourcing strategies combined with buyer dominant or interdependent power relationships lead to sustainable competitive advantage. There is evidence in the research findings to suggest that this may be true. However, there also appears to be other factors that affect the situation, such as the nature of the purchase (strategic or non-strategic), the profitability of the organization, the performance measure used for the sourcing strategy, and the degree of commitment to and investment in the sourcing strategy. The following chapter considers these intervening variables in more detail in relation to three critical cases.

Chapter Six

Critical Case Analysis

6.1. Chapter Introduction

Chapter Five discussed the evidence from the main survey that was carried out on twelve sourcing strategies belonging to six organisations. The aim of this chapter is to discuss three of those cases in more depth in order to analyse some of the contextual factors and second-order findings that were uncovered during the case survey. For each case, the strategic importance of the spend category is discussed and the sourcing strategy is evaluated in terms of its contribution to sustainable competitive advantage. This reveals the reasons why the sourcing strategy does or does not support sustainable competitive advantage and, if it does, the extent to which it does so. The organisational constraints that prevent each sourcing strategy from achieving its full advantage-generating potential are also identified. This enables an assessment to be undertaken as to whether the effectiveness of the sourcing strategy can be improved by addressing these limiting factors.

The first critical case discussed in Section 6.2 is high-level legal services sourcing at IndirectCo. This is a proactive case (supplier development) that gained the highest advantage-generating score in the survey (83%). The second case to be discussed in Section 6.3 is low-level legal services sourcing at IndirectCo. This is a reactive case (supplier selection) that gained one of the lowest advantage-generating scores in the survey (0%). These cases were chosen because they appear to substantiate the original research questions that proactive sourcing strategies are more likely to lead to sustainable competitive advantage than reactive ones, but only if buyer dominant or interdependent power relationships exist (high-level legal services sourcing has an interdependent power structure). They also act as an interesting counterpoint to each other, as they exist in the same organisation and are similar categories of spend.

Since the first two critical cases are concerned with examples of sourcing strategies that appear to substantiate the original research questions, it makes sense to then analyse a case that does not. Accounts payable sourcing at IndirectCo fits this definition. It has a proactive sourcing strategy and a buyer dominant power relationship, but only achieves an 11% advantage-generating score. However, this may be too obvious a case to analyse since it is concerned with a non-strategic category of spend which cannot have an impact on the organisation's profitability. It is not therefore considered as a critical case. Carton and sleeve packaging sourcing at FoodCo only attains a moderate advantage-generating score (44%) and is a proactive case, but it displays the characteristics of a buyer dependent power relationship. The case does not therefore support the null research question and is also not considered as a critical case.

Life of field seismic imaging sourcing was eventually chosen as the third critical case and is discussed in Section 6.4. This is a proactive case (supply chain management) with a buyer dominant power relationship, but it only achieves a moderate advantage-generating score of 56%. It would also have been interesting to analyse a reactive case that had a high-advantage-generating score, but such an example was not found during the survey. As it is, the three critical cases chosen comprise a representative sample of the survey findings.

The following discussion of the critical cases is based on the interviews with key decision-makers that are detailed in Appendix E. A directed in-depth interview was conducted and the interview outline document is included in Appendix F.

6.2. High Level Legal Services Sourcing at IndirectCo

6.2.1 Background

IndirectCo spent £58m in the UK in 2005 on external legal services. The majority of this spend (78%) was on high-level legal services work such as Mergers & Acquisitions (M&A) and Litigation/Arbitration/Dispute Resolution (Litigation). M&A work

accounted for £33m external spend, while £12m was spent on Litigation work.

IndirectCo has a policy of outsourcing business support services wherever possible and the internal headcount in legal services is therefore low.

The supply chain is relatively short and mainly focused on acquiring timely and knowledgeable advice from expert individuals. This provides some guarantees against risk and uncertainty in the constantly changing technical, socio-economic and political environment within which IndirectCo has to operate. The key sourcing requirement in this supply chain is, therefore, the ability to access expert and intelligent individuals with the competence to deal with highly complex and demanding problems, often at short notice and with very tight deadlines.

High level legal services are high-value/high-risk activities and post-Enron regulatory issues have significantly increased workload and complexity. There is also a reputational requirement (IndirectCo's clients and partners will only consider dealing with certain named law firms), as well as a need for specialist expertise that is not widely available. Furthermore, conflict of interest considerations often dictate IndirectCo's choice of law firm. All these issues lead IndirectCo to deal predominantly with a limited number of "magic circle" law firms. Two suppliers therefore account for 83% of the M&A work and three suppliers have 64% of the Litigation business.

6.2.2 Strategic Importance of the Spend Category

High-level legal services work is a non-core support activity for an oil and gas company such as IndirectCo. However, it enables the firm to achieve its corporate objectives and reduce its risk profile. The M&A function adds value by facilitating the parent company's continuous, non-organic growth strategy. The firm has doubled in size over the last five years through acquisitions and mergers, which has enabled it to generate returns over and above those that could have been achieved through organic growth. M&A lawyers provide legal support in affecting those deals and transactions and ensuring that due diligence is carried out. The litigation function reduces the possibility of legal proceedings against the firm and keeps directors out of jail. The category of spend is therefore strategically important and, in the case of M&A work, has an impact on the long-term profitability of the firm.

6.2.3 Evaluation of the Sourcing Strategy

Supplier development is the sourcing strategy used for high-level legal services. After initially analysing the market and selecting suitable service providers, IndirectCo now works on a continuous basis with these suppliers and has developed strong, strategic relationships with them. As demonstrated in Chapter Four, there are high levels of collaboration and integration between IndirectCo and the suppliers, consisting of product information exchange, operational linkages, cooperative norms, and relationship-specific adaptations.

Some of IndirectCo's legal staff act as relationship managers with the suppliers, and the law firms provide secondees (at a comparable rate to in-house provision) who are embedded in IndirectCo's legal function. The sourcing strategy is based on improving external value for money through the consolidation of demand and the development of long-term relationships with a few preferred suppliers. Core suppliers are given guaranteed work in return for commitment and responsiveness. Most of the preferred suppliers also provide IndirectCo with discounted rates but one large, prestigious law firm (with 57% of the M&A spend) is reluctant to do so.

Despite there being some management information systems weaknesses, IndirectCo's in-house legal staff believe they are able to control the design and specification process pre- and post-contractually in an effective manner. There are standard definitions in place in terms of legal grades, and how work should be organised, measured and accounted for, but there is some concern over performance measurement of suppliers due to the difficulty of measuring effective resource management against discounted rates. For instance, it is difficult to micro-manage the work effort put in by suppliers and to know exactly how much effort is needed for a particular piece of work.

It is also not known when associates or non-qualified staff may be doing legal work, and it is difficult to police who comes to meetings and how many should be involved and invoiced for. Furthermore, it is not clear to what extent the discount rates are 'real' savings that could not have been achieved by the use of alternative sourcing approaches rather than by the use of long-term preferred suppliers.

There is a need to properly specify key performance indicators wherever possible and the legal group is currently engaged in this task. However, high-level legal services sourcing involves the buying of intangibles in the form of knowledge and expertise, which makes the setting of objective measures difficult. Decisions are usually based on how long a supplier has been a partner or how long they have had a particular subject expertise, but these are subjective input measures.

Cost and time can usually be measured objectively (the rate per hour multiplied by the number of hours provided), but this is not necessarily a good indicator of quality. The amount of value added would be a better measure, but using this would entail the two parties jointly determining and agreeing what value-add has been achieved. Comparing one supplier's value-add with another's would also be difficult.

In conclusion, measuring cost and time in high-level legal services is usually possible, but quality is more difficult. Key decision-makers are extremely satisfied with the provision of high-level legal services work from suppliers, but are not able to quantify this in a meaningful way.

In the absence of objective performance measures, there are a number of objective indicators that could be measured, such as "market closure", "increased revenue", "differentiated product", "increased capability" and so on. These would indicate that the sourcing strategies make a contribution to increased functionality as well as reduced cost, thus increasing the likelihood of sustainable competitive advantage being achieved. Although the interviewees agreed that the sourcing strategy does increase the firm's capability, this could not be quantified. There are no measures in place for the other objective indicators either.

Despite the lack of quantifiable performance measures, key decision-makers agree that IndirectCo has gained significantly from the supplier development approach. It has enabled the organisation to develop a unique relationship with core suppliers based on a mutual understanding that has been built up through working together for many years. The only problem is the high cost involved. A recent company review concluded that the cost of legal services work is too high and a cost reduction target of 10% has been

imposed on the function. It is well-known that IndirectCo's "magic circle" suppliers earn profits in excess of 30%, and the supplier with 57% of the M&A work achieves 43% returns. These levels of profitability appear to be at the expense of IndirectCo.

The main focus of the relationships between IndirectCo and their core suppliers is service delivery (functionality) and there appears to be little effort to reduce costs. Cost reduction would require process visibility along with a joint commitment to reducing waste. There is no evidence to suggest that this is the case. The "magic circle" suppliers only appear to collaborate in terms of the product and do not work with IndirectCo on process efficiency improvements. There is some concern that solutions are often over-engineered and that working arrangements are not streamlined. Another concern is that the partnership approach may well increase dependency on core suppliers by the creation of intangible switching costs over time. This is evidenced by the opportunistic behaviour of the leading M&A supplier.

Insourcing would be a less expensive sourcing option and would also reduce the reliance on external providers, but the interviewees were not convinced that this would work. Competition lawyers would not gain the experience needed by working solely in-house. They need to be operating in the market, experiencing different types of M&A work, to be effective. Furthermore, in-house litigators would not be able to appear in court, and there are also capacity utilisation issues for specialist requirements with irregular demand patterns. Some thought has been given to a legal SWAT team with core capabilities that travels around the world dealing with company issues, but this is not really appropriate for M&A and litigation work, and is difficult to achieve given the complex governance structure of the organisation.

Adopting more of a market-based approach is another way of reducing costs and potential supplier lock-in. Second- and third-tier legal firms usually operate with lower profit margins (between 15% and 25%) than their "magic circle" counterparts and would be able to offer lower prices, but the interviewees were sceptical of this approach. Although increased competition would certainly drive down fees, it is not thought that the second- and third-tier suppliers have the range of expertise needed to satisfy IndirectCo's complex and diverse requirements. Furthermore, reducing the level of

business with core suppliers would have a detrimental effect on the commitment, responsiveness, and joint-working initiatives that are essential for this type of work.

6.2.4 Conclusion

High-level legal services is a strategic category of spend that enables IndirectCo to achieve its corporate objectives. The M&A work facilitates the pursuance of an extensive non-organic growth strategy, which increases the long-term profitability of the organisation, while the litigation work reduces the exposure to risk and thus protects those returns. Supplier development has been a successful sourcing strategy in supporting this process, as its close, collaborative relationships with key suppliers are the only effective way of delivering the level of expertise, commitment and responsiveness needed to meet IndirectCo's diverse and complex requirements in this area. However, there are no measures in place that demonstrate a direct link between the sourcing strategy used and the profits generated.

IndirectCo aims to reduce the cost of its high-level legal services work by 10%. Process visibility and joint waste reduction will help, but there is also a need to reduce the possibility of lock-in with the "magic circle" suppliers. It is unlikely that a radically different sourcing approach will be acceptable to internal stakeholders, given their risk averse nature, but it may be possible to make incremental changes by segmenting the spend. Work that is high-risk and with irregular demand would continue to be sourced through a proactive approach with key suppliers, but there may be scope for high-risk work with regular demand to be insourced and for medium- or low-risk work with episodic demand to be sourced with second- and third-tier suppliers as part of a market-based approach. A segmented approach to sourcing would go some way towards reducing costs and potential lock-in, but great care would need to be taken in striking the right balance between injecting some competition into the supply market and ensuring the continued commitment of the "magic circle" suppliers.

The main survey found that high-level legal services sourcing at IndirectCo achieves an advantage-generating score of 83%, which indicates that the approach supports sustainable competitive advantage but not entirely. This is substantiated by the critical case study evidence. The nature of the spend category dictates that a proactive approach

is undertaken in order to achieve the high level of functionality that is required. However, there could be more focus on cost reduction. The introduction of joint process efficiency reviews, robust supplier performance measures, and the judicious use of market exposure may help to achieve cost savings as well as functionality improvements. IndirectCo may then be able to increase the value that it can appropriate from the sourcing strategy, thus improving its competitive superiority and its advantage-generating potential.

6.3. Low Level Legal Services Sourcing at IndirectCo

6.3.1 Background

Low level legal services sourcing, comprising activities such as conveyancing and immigration applications, accounts for only a small percentage of IndirectCo's UK spend on external legal services. The exact amount is unknown because, unlike high-level legal services, the low-level spend is decentralised. Individual business units deal with such activities and there is little visibility of the details on the part of the procurement function and the centralised legal services team. Furthermore, due to the low-value nature of the work, there is little incentive to exert more centralised control over the spend category.

The supply chain is short and focuses mainly on acquiring timely and cost-effective legal transactions from local providers. Conveyancing and immigration applications are routine, low-value, low-risk activities that operate in stable legal environments and can be provided by many competent suppliers of varying size. The requirements are not complex or demanding, nor is there a need for scarce expertise. Low-level legal services work is usually limited to one jurisdiction or small region and the level of reach of the transaction is therefore limited.

6.3.2 Strategic Importance of the Spend Category

Low level legal services work is a non-core, non-strategic category of spend to an oil and gas company such as IndirectCo. It is concerned with low-value, non-critical activities with limited reach which do not have a significant impact on the financial performance of

the organisation. The category of spend is therefore not strategically important and does not have an impact on the long-term profitability of the firm.

6.3.3 Evaluation of the Sourcing Strategy

As demonstrated in Chapter Four, supplier selection is the sourcing strategy used for low-level legal services work. IndirectCo selects from offerings made by suppliers currently operating in the market. An arms-length relationship exists between buyer and seller, consisting of low levels of collaboration and interaction, with only contractual information exchange taking place. IndirectCo's role is limited to market analysis, supplier selection and performance monitoring of the first-tier suppliers only.

The sourcing strategy is implemented through a tender process with strict guidelines and is measured by means of cost reduction with a standard threshold of capability requirement. This enables procurement to exert some degree of control over the activities without expending critical resources. Increasing functionality is not seen as a major requirement for such routine, commoditised work and objective performance indicators such as "market closure", "increased revenue", "differentiated product", and "increased capability", which would indicate a contribution towards sustainable competitive advantage, are not therefore appropriate. An arms-length approach based on market contestation and with a performance measure of cost reduction appears to be appropriate for this category of spend.

Although the robust tendering process enables procurement to exert some degree of control over low-level legal services sourcing without expending critical resources, there is a hidden cost involved. Business managers spend considerable time and effort on sending out enquiries, evaluating quotations and selecting suppliers for relatively low-value transactions. There may therefore be scope for spend to be consolidated centrally and longer-term relationships set up with a reduced number of suppliers. This may enable IndirectCo to reduce transaction costs while still maintaining product cost effectiveness through economies of scale, thus increasing its value for money proposition.

6.3.4 Conclusion

The main survey found that low-level legal services sourcing at IndirectCo achieves an advantage-generating score of 0%, which indicates that the approach does not support sustainable competitive advantage. This is substantiated by the critical case study evidence. Low-level legal services is a non-strategic category of spend that does not have a significant impact on the long-term profitability of IndirectCo. The low-value, commoditised nature of the spend dictates that a reactive approach is undertaken based on arms-length relationships and market contestation. However, transaction costs are likely to be high. The introduction of consolidated spend and a reduced number of preferred suppliers may therefore be a more cost effective solution for the firm, although it will not increase the advantage-generating potential of the sourcing strategy because it does not increase the functionality of the product.

6.4. Life of Field Seismic Imaging Sourcing at ExtractCo

6.4.1 Background

The world's first life-of-field seismic imaging project was carried out by ExtractCo in Norway. The equipment was installed on the seabed at a cost of \$40m and data relating to the oil field has been gathered ever since. There were found to be considerable benefits in the ability to be able to drill better wells, to be able to extract pools of residual oil, and to drill more effectively. ExtractCo was able to manage the field more effectively and get more out of it.

As the benefits started to emerge, one or two other business units from around the world saw this as a good investment opportunity. The Azerbaijan business unit based in Bakau decided to initiate a life of field seismic imaging project and the North Sea business unit based in Aberdeen decided to do the same in a field west of the Shetland Islands. The projects were very similar to the first one, with comparable levels of expenditure. They are currently on-going. The North Sea project has the equipment installed and operating, while the Bakau project is being delivered with installation taking place soon.

A supply chain management sourcing strategy was adopted for the first life-of-field seismic imaging project. This was seen as effective, therefore the same approach was used for the second and third projects. There were however some differences due to the political and geographical circumstances involved. In Azerbaijan there were fewer suppliers available, since some companies were not prepared to work in a location that is so difficult and remote. There were also local supply chain requirements imposed on ExtractCo by the government. These required ExtractCo to award certain types of work to local providers or to international companies that had a local presence. Despite the constraints imposed by the Azerbaijan government, ExtractCo was still able to work with its preferred suppliers for the larger items of expenditure.

6.4.2 Strategic Importance of the Spend Category

Life-of-field seismic imaging provides dynamic images of oil and gas fields, which enables ExtractCo to manage more effectively the production of hydrocarbons from those fields. A new map of the field is generated every six months in order to gain visibility on where production has occurred and where effort needs to be focused for the remaining production. It enables the firm to extract more oil and gas from each field, and to reduce the number of drilling-wells required. This has a significant effect on the profitability of the organisation. The wells cost between \$20m and \$30m each, therefore using less wells over the life of the field more than repays the investment in the technology.

ExtractCo has detailed figures on the cost savings achieved by using life-of-field seismic imaging, but the information is confidential. Not only does ExtractCo have its own privacy concerns, but it is also bound by confidentiality agreements with its business partners. Although ExtractCo is the operator for all three projects, they are not the sole equity holder. There are equity partners in each of the three projects and ExtractCo is bound by joint operating agreements that forbid any release of information unless there is prior permission to do so. However, the interviewees asserted that there are significant profitability advantages over a period of between ten and twenty years (the life of the field). Life-of-field seismic imaging can therefore be said to be a strategic area of spend and contributes to the organisation's sustainable competitive advantage.

6.4.3 Evaluation of the Sourcing Strategy

As demonstrated in Chapter Four, supply chain management is the sourcing strategy used for the life of field seismic imaging projects. After initially analyzing the market and selecting suppliers, ExtractCo now works on a continuous basis with all the suppliers at every stage of the supply chain. There are high levels of collaboration and integration between ExtractCo and the suppliers, consisting of product/process information exchange, operational linkages, cooperative norms, and relationship-specific adaptations.

The original intention was to use supplier selection by means of a prime contractor but, in hindsight, this would have been a mistake. The prime contractor that had been chosen would not have had enough knowledge and experience across the range of services that were needed to always make the best decision on ExtractCo's behalf. There is not a supplier available in the marketplace which can offer the full range of services that is needed to implement the life-of-field seismic imaging projects.

Because of the immaturity of the life-of-field seismic imaging technology, supply chain management has been more successful than supplier selection would have been in developing the suppliers in line with ExtractCo's technical requirements. It has enabled the firm to enter into tailored relationships with each of the different suppliers, which are international players from all over the world. Supply chain management has worked well for ExtractCo. It has enabled the firm to develop a very flexible approach which best meets the needs of the relationships between itself and the suppliers, and has contributed towards the success of the projects. However, the value of the sourcing strategy is not measured. Nobody in the organisation has tried to quantify the value of the sourcing strategy or tried to compare it with a supplier selection approach.

In the absence of objective performance measures, there are a number of objective indicators that could be measured, such as "market closure", "increased revenue", "differentiated product", "increased capability" and so on. These would indicate that the sourcing strategies make a contribution to increased functionality as well as reduced cost, thus increasing the likelihood of sustainable competitive advantage being achieved. However, the sourcing strategy is not measured by objective indicators either.

Another problem with trying to measure the contribution of the sourcing strategy to the financial performance of the organisation is the influence of the oil price on all investment decisions. ExtractCo uses a notional oil price when making investment calculations. A figure of \$30 per barrel was used for the original investment decision, but oil is now selling for \$60 per barrel. This increase in revenue would occur whatever the sourcing strategy adopted. It must be said, however, that the profitability of the project is not directly proportional to the oil price. The cost of services offered by suppliers to the oil and gas industry tends to increase substantially in line with a rise in the price of oil. For instance, it cost \$30m dollars to drill a well when the oil price was \$30 per barrel, but \$60m today because drilling rigs are more expensive. The profitability from the life-of-field seismic imaging projects has been more attractive than anticipated, but the increase is not directly proportional to the rise in the price of oil and gas.

Despite the lack of quantifiable performance measures, key decision-makers agree that ExtractCo has gained from the supply chain management approach, which has enabled the company to adopt customised relationships and develop congruent suppliers in a new area of activity. The suppliers have also benefited. They have a much closer relationship with the client and have not had to work through a third party. By cutting out the middleman, who always drives a hard bargain, the suppliers have also gained financially from the arrangement, although it is not possible to quantify this.

Because of the size of ExtractCo and its financial health, it was able to inject significant resources into the project to make it work. A prime contractor might not have been willing or able to do this. Furthermore, the fact that the suppliers have had direct relationships with ExtractCo is always desirable in terms of marketing their services to other clients. The suppliers have a vested interest in ensuring that the projects are successful because their involvement sets them up for success if a significant market develops.

Large investments have been made by ExtractCo in the supply chain management sourcing strategy and it is seen as unique in relation to competitors. However, the uniqueness is not due to the sourcing strategy itself, but because there are no competitors for life of field seismic imaging. ExtractCo is the only company currently pursuing the concept. Oil companies of a large size have access to considerable resources and would

probably source in a similar way. These competitors would look at the way ExtractCo managed the supply chain (the only benchmark) and quickly recognise the value of the approach. Furthermore, they would have access to the same suppliers, and would have the leverage to be able to cherry-pick the services they wanted and create the relationships with each of the suppliers that add value to the project. They would be able to identify the value quite clearly and be able to recreate it effectively.

Despite the perceived success of supply chain management, in the long term ExtractCo does not want to continue with the approach for future projects. This is because it has a considerable impact on internal resources, such as procurement specialists, legal experts, and seismic operations staff. Supply chain management is seen as a time-consuming overhead. Once the technology matures and the supply chain becomes more established, not as much effort will be required in developing suppliers. At this stage, life-of-field seismic imaging will almost become a commodity that could be bought off the shelf from a prime contractor. Supplier selection will then become the preferred choice of sourcing strategy.

ExtractCo usually only adopts supply chain management for services that are strategically important and where there is substantial risk to their ability to deliver their business objectives. There are well-developed and mature supply chain management processes in place for managing major relationships with contractors. Although life of field seismic imaging is strategically important to ExtractCo, business delivery does not depend on it. It is not therefore seen as appropriate to manage it according to supply chain management principles in the long-term. The aim is to let market forces influence what happens in the future. The most important element is the equipment that is purchased and stored on the seabed. If there was an upsurge in demand for this equipment then gaining access to it may become difficult because demand might outstrip the suppliers' ability to deliver. In this case a relationship-based approach with one or two suppliers may be considered, but it is not envisaged that this will happen.

ExtractCo has undertaken the first three life-of-field seismic imaging projects in the world and there is no evidence yet of any other oil company doing the same thing. However, when the industry in general starts to see some evidence of success and other oil companies decide to undertake similar projects this will create more demand and

cause the supply market to respond, with contractors setting themselves up as prime contractors. Currently it is still very risky for any contractor to set themselves up as a "one-stop shop" without more demand. There is, however, a certain degree of interest. A couple of suppliers have had discussions with ExtractCo about setting themselves up as a prime contractor and taking responsibility for sub-contracting all the activities that they could not undertake themselves.

6.4.4 Conclusion

Life-of-field seismic imaging is a new technology that enables ExtractCo to increase the utilisation and management of its oil and gas fields, thus generating increased profitability over the life of the field. Since no other company is currently pursuing this approach, the extra profits generated enable ExtractCo to make above industry- normal returns. Supply chain management has been an effective sourcing strategy in supporting this process, and is the only approach that was appropriate given the immaturity of the technology and the lack of a competent prime contractor. However, there are no measures in place that demonstrate a direct link between the sourcing strategy used and the profits generated.

Once the technology matures and suppliers develop their competences in this area, ExtractCo aims to revert to a supplier selection sourcing strategy, which is the preferred approach for dealing with non-core spend. There is no commitment towards using supply chain management as a long-term strategy, despite its advantage-generating potential. The aim is to allow market forces to take precedence in due course. Because of this, ExtractCo has an open and transparent approach to developing suppliers. This enables suppliers to gain significantly from the relationship in terms of increased knowledge and expertise which can easily be transferred to other business transactions. Other oil companies are likely to enter the life of field seismic imaging market in the future, and the suppliers will be well-placed to service their needs. ExtractCo may therefore be developing suppliers now for the future benefit of their competitors.

An alternative sourcing approach would entail ExtractCo becoming more committed to supply chain management as a long-term strategy. They could attempt to be less transparent in their development processes and lock suppliers into relationships through

confidentiality agreements, thus closing them off to competitors. This would create isolating mechanisms, and would make the relationships with suppliers more systemic and the sourcing strategy more inimitable, thus increasing its long-term advantage-generating potential. This alternative approach would need to be evaluated in terms of its costs, risks and rewards. However, it is not likely to be considered for a category of spend that is seen as non-core.

The main survey found that life-of-field seismic imaging sourcing at ExtractCo achieves an advantage-generating score of 56%, which indicates that the approach supports sustainable competitive advantage but only to a moderate extent. This is substantiated by the critical case study evidence. ExtractCo acknowledges that a proactive approach is required for existing projects but is not committed to supply chain management for future projects and therefore does not attempt to fully utilise the long-term benefits of the sourcing strategy. Taking a more opaque approach to developing suppliers and locking them in to confidential relationships may make the sourcing strategy more inimitable and close the market to new entrants, thus improving its competitive superiority and its advantage-generating potential

6.5. Analysis of the Critical Case Evidence

The aim of this chapter was to discuss three of the surveyed cases in more depth in order to analyse some of the contextual factors and second-order findings that were uncovered during the survey. For each case, the strategic importance of the spend category was discussed and the sourcing strategy was evaluated in terms of its contribution to sustainable competitive advantage.

The two proactive sourcing strategies both support the achievement of sustainable competitive advantage but vary in the extent to which they do so. A number of reasons were identified that may prevent the sourcing strategies from achieving their full advantage-generating potential and some suggestions were made as to how these constraints could be overcome.

An interesting observation from the case study analysis is that there is clearly a link between the type of sourcing strategy used and the strategic significance of spend categories to the business model of the organisation. The two proactive cases both relate to strategic categories of spend, whereas the reactive case is concerned with non-strategic purchases. This shows that organisations seem to understand that proactive sourcing is necessary for strategically important spend categories, and that the investment of time, money and people is not warranted for tactical categories of spend. As a future research agenda, it would be interesting to understand which organisations do not use proactive sourcing for strategically critical categories of spend and why. In the same vein, it would also be interesting to follow up the life-of-field seismic imaging case in a few years time, after ExtractCo has changed from a proactive to a reactive approach, in order to see how this change affects the sourcing situation.

A second observation is that organisations can face problems by being either too proactive or not proactive enough. IndirectCo may be too committed to proactive sourcing which has blinded the firm to the opportunistic behaviour and lack of process information exchange displayed by its high-level legal services suppliers. Contrarily, ExtractCo may not be proactive enough by refusing to contemplate a role for the supply chain management approach in sourcing future life-of-field seismic imaging projects. In relation to reactive sourcing, it could also be argued that IndirectCo procures low-level legal services too reactively which increases transaction costs and militates against value for money capture.

A third observation is that different types of sourcing strategy can vary by the extent to which they demonstrate proactive or reactive characteristics. For instance, both high-level legal services sourcing and life-of-field seismic imaging sourcing are classified as proactive approaches, but it could be argued that the former is more proactive than the latter due to there being more commitment to a long-term collaborative approach. Treating all proactive sourcing strategies (and, by association, reactive approaches) as the same may not therefore be advisable. They may not be directly comparable.

A more sophisticated model is required to measure sourcing strategies other than the rather simplistic reactive/proactive designation. This could take the form of a *scale of integration*, whereby a number of criteria could be measured that determines the level of

integration between a buyer and seller. Rather than just stating whether product and process information exchange, operational linkages, cooperative norms, and relationship specific adaptations are nominally "high" or "low", they could be rated according to an interval scale of 1 to 7.

Furthermore, the reactive/proactive model does not differentiate between the integration criteria, as it assumes that they will all be either low or high. This is not realistic. For instance, high-level legal services sourcing at IndirectCo would have low levels of process information exchange, but would rate highly on all the other criteria, including product information exchange. Similarly, life-of-field seismic imaging sourcing would have a high degree of operational linkages, a low level of relationship specific adaptation and cooperative norms, with a medium degree of product and process information exchange. Even low-level legal services sourcing, where one would expect integration to be low, would display some degree of operational linkages. It is clearly desirable for the criteria to be rated individually, rather than as a homogenous group.

Having measured the scale of integration of a sourcing strategy, this could then be combined with a *situational scale*, which would measure the situational determinants that affect a sourcing strategy. This would include the strategic nature of the spend, whether the sourcing strategy is measured in terms of profitability, and the degree of commitment to and investment in the sourcing strategy. These could all be measured on an interval scale of 1 to 7. Using the critical cases as examples again, low-level legal services sourcing would have a low score for all four criteria, whereas high-level legal services sourcing would only rate lowly on one criterion (profitability measurement). Life-of-field seismic imaging sourcing would again be somewhere between the other two: low for profitability measurement and commitment, average for strategic nature, and high for investment.

The assessment conducted above is of course rough and subjective, but further research could incorporate the revised model into a robust and wide-ranging empirical study. Assessing both the integration criteria and the situational determinants individually against an interval scale would facilitate quantitative analysis and would give a better indication as to whether a sourcing strategy would have advantage-generating potential.

In conclusion and notwithstanding the limitations of the reactive/proactive model, the critical case analysis has enabled the evidence from the main survey to be substantiated. Proactive sourcing strategies dealing with strategic categories of spend support the achievement of sustainable competitive advantage. The degree to which they do so depends on the performance measures used and the degree of commitment to the sourcing strategy. Reactive sourcing strategies, on the other hand, do not support the achievement of sustainable competitive advantage.

Chapters Five and Six have discussed the empirical evidence relating to the case survey and the critical case analysis respectively. Chapter Seven now presents the summary and conclusions of the whole thesis.

Chapter Seven

Summary and Conclusions

Chapter Seven is the final chapter of the thesis and incorporates a concluding summary, develops a model, re-visits the research questions, identifies the contribution and limitations of the research, and puts forward recommendations for further research.

7.1. Concluding Summary

7.1.1 Summary of the Literature Review

The aim of this thesis is to assess whether particular sourcing strategies lead to sustainable competitive more than others. In order to do so, the resource-based approach was found to be a useful starting point, as it puts forward a theorised view of what leads to sustainable competitive advantage. According to the resource-based view, sustainable competitive advantage is the achievement of long-term rents (above normal profits over an extended time period). It is achieved by owning, deploying and protecting advantage-generating resources (resources which are inimitable, durable, appropriable, non-substitutable and competitively superior) that enables an organization to out-perform others in the same sector or market.

The power regimes approach to sourcing is based on the resource-based view. Rather than assume that buyer/supplier relationships cannot be managed, or that they should conform to a single, idealised form, the power regimes approach puts forward four sourcing strategies that an organisation may adopt, dependent on contingent circumstances. The two proactive sourcing strategies, supplier development and supply chain management, appear to have advantage-generating potential, as they are based on collaborative and integrated relationships with suppliers which are systemic and

knowledge-based and thus unique, opaque and difficult for competitors to copy. The two reactive sourcing strategies, supplier selection and supply chain sourcing do not have these advantages since they are based on market contestation

The power structure (based on the relative degree of utility, scarcity, information asymmetry and switching costs that exist between the buyer and supplier) appears to have an effect on whether proactive sourcing strategies can achieve sustainable competitive advantage. Only in situations of buyer dominance or interdependence will proactive sourcing strategies be successful, as they enable the buying organisation to appropriate the value from the relationship, either partly or in full.

7.1.2 Summary of the Methodology

The main aim of the investigation is pure research, since it is being conducted in order to contribute to the body of knowledge about sourcing strategies and their relationship to sustainable competitive advantage. Due to the established and accepted procedures that are available, the thinking behind this research project is predominantly based on the positivist paradigm. A model and research questions are constructed based on the literature, which are then tested across a range of different situations in order to assess their generalisability. A deductive approach to this research project was chosen, since it is a robust approach which is driven by theory rather than observation.

It was possible to devise fair tests for both research questions. External validity was ensured by selecting a representative sample of cases based on quota and purposive sampling methodologies. A heterogeneous selection approach to the main survey enabled the research questions to be tested across a diverse range of contexts and situations, thus giving confidence in the research findings. A further analysis of critical cases meant that depth was achieved as well as breadth. Internal validity was ensured by determining the strength of the relationships between the independent, dependent, moderating and intervening variables, and by using a range of different qualitative and quantitative data collection methods in order to achieve triangulation.

A preliminary survey was conducted in order to identify the spread of sourcing strategies that exist within typical organisations and to act as a selection method for the main

research stage. The main research stage took place by means of a case survey, comprising secondary data, structured interviews and a questionnaire, along with a critical case analysis based on directed in-depth interviews. Multiple cases were used in order to examine patterns across a number of different situations, and a number of interviews and questionnaires were conducted in order to gather multiple interpretations of data.

7.1.3 Summary of the Case Survey

In order to test whether only proactive sourcing strategies lead to sustainable competitive advantage and to establish the affect of the power relationships, a survey was carried out. Twelve sourcing strategies from six organisations were studied in depth. The organisations varied in size and were from different industries. Furthermore, the sourcing strategies comprised six reactive and six proactive approaches and exhibited a varied mix of different types of power relationships. This enabled a thorough examination of the variables to be carried out.

Although it was possible to objectively establish whether the case study organisations had achieved sustainable competitive advantage over an extended time period (the last five years), profitability figures could not be isolated for each sourcing strategy. A proxy measure (advantage-generating score) was therefore used to determine whether particular sourcing strategies have the potential to achieve sustainable competitive advantage. The advantage-generating score was determined by testing the inimitability, durability, appropriability, substitutability, and competitive superiority of each sourcing strategy.

The case survey provides strong evidence to suggest that reactive sourcing strategies cannot achieve sustainable competitive advantage. Proactive sourcing strategies, on the other hand, may lead to sustainable competitive advantage, particularly when combined with either buyer dominant or interdependent power relationships. However, a number of intervening factors were identified during the survey that appear to influence the situation, such as the nature of the purchase (strategic or non-strategic), the objective of the sourcing strategy (profitability or cost reduction), and the degree of commitment to and investment in the sourcing strategy.

7.1.4 Summary of the Critical Case Analysis

Three of the surveyed cases were analysed in greater depth in order to investigate some of the contextual factors and second-order findings that were uncovered during the survey. For each case, the strategic importance of the spend category was assessed and the sourcing strategy was evaluated in terms of its contribution to sustainable competitive advantage.

The critical case analysis found a clear link between the type of sourcing strategy used and the strategic significance of spend categories to the business model of the organisation. The two proactive cases both relate to strategic categories of spend, whereas the reactive case is concerned with non-strategic purchases. This shows that organisations seem to understand that proactive sourcing is necessary for strategically important spend categories, and that the investment of time, money and people is not warranted for tactical categories of spend.

The critical case analysis also enabled the evidence from the case survey to be substantiated. Proactive sourcing strategies dealing with strategic categories of spend support the achievement of sustainable competitive advantage. The degree to which they do so depends on the performance measures used and the degree of commitment to the sourcing strategy. Reactive sourcing strategies, on the other hand, do not support the achievement of sustainable competitive advantage.

7.2. Key Findings

7.2.1 Reactive Case Findings

A key finding of the research is that reactive sourcing strategies do not achieve sustainable competitive advantage. Organisations should not therefore pursue reactive sourcing strategies with a view to achieving sustainable competitive advantage, and indeed there is no evidence that they do. Cost reduction appears to be the primary motivation for adopting reactive approaches.

Another key finding is that the supply chain sourcing approach does not appear to be more advantage-generating than supplier selection. Supply chain sourcing enables the buyer to eradicate the opportunistic behaviour of suppliers by bypassing them in the supply chain and turning a buyer dependence power relationship into one of buyer dominance, thus allowing the buyer to appropriate the value from the relationship. It is the power relationship that improves advantage-generating performance rather than the difference between supply chain sourcing and supplier selection. Organisations should therefore only pursue supply chain sourcing if it enables them to improve the power situation in relation to its suppliers.

Another key finding is that reactive approaches, although they do not achieve sustainable competitive advantage, are not necessarily seen as unsuccessful. Five of the six reactive strategies in the study elicit positive responses in terms of whether key stakeholders see them as successful. The only negative response is in the case where costs were increasing and there was evidence of poor flexibility and lack of innovation from the supplier. These behaviours are a consequence of the buyer dependent power situation that exists rather than an indictment of reactive sourcing per se. The conclusion that reactive sourcing is “bad” should be avoided. Reactive approaches can be successful, but only where organisations have power resources in relation to their suppliers.

The research was also able to establish the basis by which reactive strategies are seen as successful. In four out of six cases the success of the sourcing strategy was assessed by the level of cost reductions achieved. In the other two cases there were no internal measures in place at all, assessment being based on a general perception as to whether the sourcing strategy helped a project to be delivered on time and within budget. This demonstrates that organisations are not always measuring the contribution of their sourcing strategies and, when they do so, they do not view them as advantage-generating resources that can achieve profitability, but merely as operational techniques to reduce costs. Reactive sourcing strategies are seen as successful merely because they achieve their cost reduction measures.

7.2.2 Proactive Case Findings

According to the two research questions, a proactive sourcing strategy combined with buyer dominant or interdependent power relationships should achieve sustainable competitive advantage. This is supported by the findings of this research. All four proactive cases with above-average advantage-generating scores display either buyer dominant or interdependence characteristics. Furthermore, looking at the counterfactual evidence, the only case which displayed a buyer dependent power relationship did not achieve competitive advantage.

A key finding of the research is that there is a difference in advantage-generating score between buyer dominant power situations and those displaying interdependent characteristics. In situations where the focal relationship was buyer dominance, the advantage-generating score was consistently higher than interdependent power relationships. This is because the value generated by the proactive relationship will have to be shared in the latter situation. Organisations should recognise that interdependent power relationships not only require investment in time and resources, but may also dilute advantage-generating potential. Buyer dominance therefore appears to be the “ideal” power situation.

Another key finding of the research is that there appears to be intervening factors that over-rule the assertions regarding power relationships. Some cases displayed buyer dominant power relationships but achieved low advantage-generating scores. The nature of the spend appears to be a particularly important consideration. A sourcing strategy that deals with non-strategic purchases that do not have a direct impact on an organisation’s bottom line will not be advantage-generating.

Another intervening variable that was identified in the research was that of corporate performance. Organisations that do not achieve sustainable competitive advantage as a company are not able to do so through their sourcing strategies. Taking this further, it could be argued that the advantage-generating score does not really indicate whether a sourcing strategy achieves sustainable competitive advantage, but is more of an assessment of its potential to do so. Sourcing strategies may have the potential to achieve

sustainable competitive advantage but may not do so due to the poor performance of the company.

Another intervening variable that was identified during the research is the level of commitment to the sourcing strategy. In situations where proactive sourcing is not the desired approach and stakeholders have a preference for reactive sourcing, only moderate advantage-generating scores can be achieved. Organisations that do not pursue sourcing strategies with a view to them being advantage-generating will not take advantage of their full potential.

Lack of investment is another factor that impinges on the ability of a proactive sourcing strategy to be advantage-generating. Proactive sourcing strategies, particularly supply chain management, are resource intensive and require large resource investments. Without this investment, the advantage-generating potential is unlikely to be achieved.

Another key finding is that proactive sourcing strategies are sometimes used by organisations for non-strategic categories of spend. Although this appears to be an inefficient use of resources, there may be a logical explanation. In situations where the supply market has become stagnant, uncompetitive and complacent, supplier development may be used as a short-term tactic with the long-term aim of developing a healthy, competitive market. Once this has been established, a supplier selection approach can then be adopted based on market contestation, which will be entirely appropriate given the non-strategic nature of the spend. It may therefore be appropriate to use proactive sourcing for non-strategic categories of spend, but only as a short-term tool with which to achieve an organisation's long-term aims and objectives.

Another key finding is that organisations are not necessarily measuring proactive sourcing strategies in terms of their ability to achieve sustainable competitive advantage. Two of the cases are not measured at all and the others are measured on the ability of the sourcing strategy to achieve cost reductions rather than profitability. If the objective of a sourcing strategy is not necessarily to be profitable, then it is unlikely to fulfil its potential in terms of sustainable competitive advantage. It could be argued that if more attention were paid to the ability of sourcing strategies to generate profitability, their

ability to be advantage-generating should improve, although they are still likely to be constrained by their contingent commercial and operational circumstances.

7.2.3 Critical Case Findings

A key finding of the critical case analysis is that there is clearly a link between the type of sourcing strategy used and the strategic significance of spend categories to the business model of the organisation. The two proactive cases both relate to strategic categories of spend, whereas the reactive case is concerned with non-strategic purchases. This shows that organisations seem to understand that proactive sourcing is necessary for strategically important spend categories, and that the investment of time, money and people is not warranted for tactical categories of spend.

Another key finding is that organisations can face problems by being either too proactive or not proactive enough. Some organisations are too committed to proactive sourcing which has blinded them to the opportunistic behaviour and lack of process information exchange displayed by its suppliers. Contrarily, other organisations are not proactive enough by refusing to contemplate supply chain management for projects that clearly warrant the approach. It was also found that procuring too reactively can increase transaction costs and militate against value for money capture. Organisations should therefore carefully consider the degree of reactivity or proactivity in their sourcing strategies.

Following on from this, the research found that different types of sourcing strategy varied by the extent to which they demonstrated proactive or reactive characteristics. For instance, one of the proactive critical cases was found to be more proactive than the other due to there being more commitment to a long-term collaborative approach. Treating all proactive sourcing strategies (and, by association, reactive approaches) as the same may not therefore be advisable, as they may not be directly comparable. A more sophisticated model is therefore required to measure sourcing strategies other than the rather simplistic reactive/proactive designation.

7.3. Developing a Model of Sourcing Strategy and Sustainable Competitive Advantage

The findings from the case survey and the critical case analysis have enabled a model to be developed which outlines the relationship between sourcing strategies and sustainable competitive advantage. This model is presented in Figure 7.1.

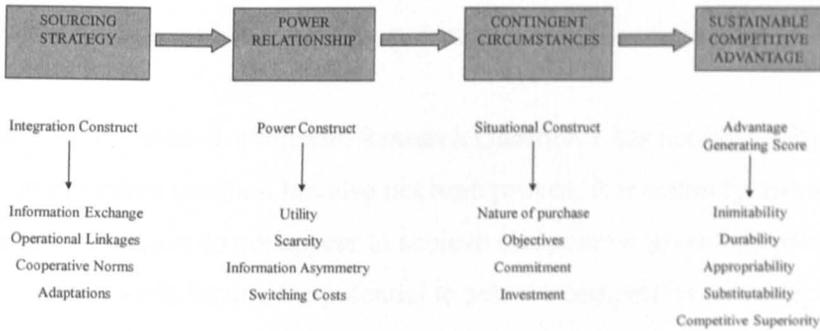


FIGURE 7.1: The Relationship Between Sourcing Strategies and Sustainable Competitive Advantage

Whether a sourcing strategy leads to sustainable competitive advantage will firstly depend on the degree of integration that exists between the buyer and supplier in terms of product and process information exchange, operational linkages, cooperative norms, and other relationship-specific adaptations. The second construct to consider is that of the power relationship, which is determined by the level of utility, scarcity, information asymmetry and switching costs involved. Finally, the situational context also has an influence: that is the nature of the purchase (strategic or non-strategic), the objectives of the sourcing strategy (profitability or cost reduction), and the commitment to and investment in the sourcing strategy.

The degree to which a sourcing strategy achieves sustainable competitive advantage can be measured by its inimitability, durability, appropriability, substitutability, and competitive superiority, and the outcome is likely to be determined by the degree of integration, the power relationship and the situational construct.

7.4. Revisiting the Research Questions

Two research questions were originally put forward for testing:

1. Proactive sourcing strategies lead to sustainable competitive advantage, but reactive approaches do not.
2. Proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist.

Based on the research evidence, Research Question 1 has not been fully supported, but the null research question has also not been proven. It is certainly true that reactive sourcing strategies do not appear to achieve competitive advantage. However, proactive approaches, while having the potential to achieve competitive advantage, do not necessarily do so. This is because a moderating variable (power relationship) and intervening variable (nature of the purchase) affect the outcome. Furthermore, the extent to which a sourcing strategy supports sustainable competitive advantage seems to vary depending on a number of other intervening variables (objective of the sourcing strategy; commitment to the sourcing strategy; investment in the sourcing strategy). There may also be other intervening variables that were not identified in this study.

Research Question 2 has also not been fully supported, but again the null research question has not been proven. It is certainly true that only sourcing strategies incorporating buyer dominant or interdependent power relationships achieve sustainable competitive advantage. However, a proactive sourcing strategy with an advantageous power structure will not support sustainable competitive advantage if it deals with a non-strategic category of spend.

7.5. Contribution of the Research

The thesis makes a significant contribution to the academic literature in three main respects. These are discussed below.

First, most academic studies that have considered whether purchasing plays a strategic role within an organisation have concentrated on the broad, overall contribution of the function to the firm's profitability. This thesis took a more focused stance in assessing whether particular sourcing strategies lead to sustainable competitive advantage more than others. This has enabled it to consider an aspect of purchasing's contribution to the success of an organisation that has not previously been fully addressed. Sourcing strategies vary enormously, but this research has established which type of sourcing strategy may lead to sustainable competitive advantage and which does not.

Second, most of the purchasing and supply literature cites generic "best practice" approaches such as leanness or agility as a means of achieving sustainable competitive advantage. However, these concepts are prescriptive, operational approaches based on observation rather than theory, thus casting doubt on their usefulness. This thesis is grounded in the resource-based view, which is a strategic, theorised view of what leads to sustainable competitive advantage, thus ensuring a more generalisable study. By adopting the resource-based view, this research has been able to devise a robust definition of sustainable competitive advantage and a thorough means of testing it.

Third, and most importantly, this research has enabled a robust model to be devised of the relationship between sourcing strategies and sustainable competitive advantage. Different sourcing strategies are measured according to an advantage-generating score to determine whether they achieve sustainable competitive advantage or not. The score attained will depend on the type of sourcing strategy adopted, the power relationship between the buyer and supplier, and the contingent circumstances related to the purchase. This model is unique in the purchasing and supply field.

Finally, the purchasing and supply literature increasingly calls for organisations to adopt close, collaborative relationships with suppliers in order to achieve sustainable competitive advantage. The relational view states that developing integrated relationships with supply chain partners leads to the generation of relational rents, thus enabling a firm to achieve a competitive advantage that may not be possible by acting alone. This thesis has in some ways confirmed this view. The evidence suggests that proactive relationships (based on collaboration and integration) can lead to sustainable competitive advantage.

but reactive relationships (based on arms-length market contestation) cannot. However, great care should be taken in interpreting this finding, as discussed in the following section.

7.6. Reactive vs Proactive Sourcing

The research confirms to some extent that proactive sourcing strategies may lead to sustainable competitive advantage but reactive approaches cannot. However, great care needs to be taken in interpreting this finding. The view that proactive is good and reactive is bad should be avoided. There is no doubt that proactive sourcing strategies can have considerable benefits in terms of improved functionality, innovation and control, but reactive approaches can also be beneficial. Whereas proactive sourcing strategies require considerable investment in resources and carry a high degree of risk, reactive sourcing strategies can be successful in achieving functionality and cost improvements with little effort on the part of the buyer in healthy, competitive markets and/or buyer dominant power situations.

Five out of the six reactive strategies in the study are seen as successful by the organizations adopting them and a number of advantages are cited, such as transparency, competition, cost reduction, low risk, ease of resourcing, and the avoidance of supplier lock-in. Furthermore, companies that adopt reactive sourcing strategies can still achieve sustainable competitive advantage. All three of the surveyed organisations that achieve sustainable competitive advantage adopt reactive sourcing for some of their categories of spend. In these cases, it is likely that the success of the organization is not due to the sourcing strategy itself, but can be attributed to some other isolating mechanism, such as a monopoly position, property rights, size of business, economies of scale, reputation effects, technical or commercial knowledge, and so on. Organisations should not be discouraged from using reactive sourcing strategies in appropriate circumstances.

7.7. Limitations of the Research

There are three factors that made the testing of the research questions difficult to achieve. First, profitability is the measure of competitive advantage. The case study organisations did not objectively measure the profitability of their sourcing strategies and it was not possible for the researcher to do so either. A proxy measure of advantage-generating potential was therefore used instead. Second, since the case study analysis was based on interviews rather than actual observation, the researcher was reliant on the answers given by the participants and these could have been based on their perceptions of the situation rather than actual facts. Third, it was not possible for the researcher to ascertain whether the competitive advantage was sustainable, as this was mainly a cross-sectional study, with data relating to the sourcing strategies only being gathered at one point in time.

Furthermore, it was found that the reactive/proactive model used in the study was limited in its ability to measure sourcing strategies in detail. This is because it only allows for integration criteria to be measured as nominal "high" or "low" designations, and it treats all the integration criteria as a homogenous group. A more sophisticated model is required that allows the integration criteria to be measured individually and against an interval scale, which would facilitate quantitative analysis. The situational determinants that affect the sourcing strategy could also be measured.

In addition to these points, it should be remembered that this study is correlational in nature. Even if it was possible to prove that the independent and moderating variables have an effect on the dependent variable, it is not possible to categorically determine the extent to which any of these was the actual cause of sustainable competitive advantage.

The investigation had minimal researcher intervention, as it utilised non-experimental research strategies such as surveys, questionnaires, interviews and case study analysis. To prove the research questions beyond doubt would entail manipulating the variables in order to test the cause and effect relationship. Only by isolating each variable in turn and running the study again would true cause and effect relationships be proven, but this would obviously be impossible in a business context. A true causal investigation is not therefore possible and the research findings would always have to be treated with some

degree of caution.

7.8. Recommendations for Further Research

Although it would not be possible to run a true causal investigation within a working business context, some of the other problems may be overcome. Four recommendations are put forward with this in mind.

- A more comprehensive study should be set up, which would incorporate other sources of evidence, such as documentation, archival records and direct observation. This would enable profitability to be measured and interviewees' perceptions and opinions to be enhanced by facts.
- The study should be longitudinal in nature, which would entail taking evidence relating to the sourcing strategies at several points in time over an extended period. This would enable the sustainability of particular sourcing strategies' competitive advantage to be substantiated.
- A method would need to be devised that isolates the profitability of particular sourcing strategies within the study. This will enable the proxy measure of advantage-generating score to be replaced with an objective measure of sustainable competitive advantage.
- A more sophisticated model for measuring sourcing strategies should be devised. This would incorporate interval scales that differentiate between the integration criteria and would also encompass the situational determinants that affect the sourcing strategy.

These recommendations would entail working very closely with participants and having access to detailed, confidential information. This would only be possible with organisations that have a long-term, trusting relationship with the research institution.

7.9. Final Word

No research is perfect, but the design of this investigation was robust and the implementation effective. The results can therefore be treated with confidence. The deduction stage of the research showed that the findings partially support the research questions. However, as with most business research, it is not possible to prove the research questions beyond doubt. Further research will help to validate the findings, but in the mean time this work has made a useful contribution to the body of knowledge in this area.

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Appendix A

The Preliminary Survey

QUESTIONNAIRE

A1) Which of the following best describes the MAIN ACTIVITY of your organisation?

- | | | | |
|---------------------------|--------------------------|---------------------------------|--------------------------|
| Aerospace/Defence | <input type="checkbox"/> | Health Care | <input type="checkbox"/> |
| Agriculture | <input type="checkbox"/> | House building and Construction | <input type="checkbox"/> |
| Automotive | <input type="checkbox"/> | Leisure Industries | <input type="checkbox"/> |
| Banks/Financial Services | <input type="checkbox"/> | Manufacturing | <input type="checkbox"/> |
| Chemicals | <input type="checkbox"/> | Office Equipment | <input type="checkbox"/> |
| Computer Hardware | <input type="checkbox"/> | Public Sector | <input type="checkbox"/> |
| Computer Software | <input type="checkbox"/> | Publishing / Broadcasting | <input type="checkbox"/> |
| Consumer Products | <input type="checkbox"/> | Telecommunications | <input type="checkbox"/> |
| Electronics | <input type="checkbox"/> | Transportation | <input type="checkbox"/> |
| Food | <input type="checkbox"/> | Other | <input type="checkbox"/> |
| Fuel, Utilities and Power | <input type="checkbox"/> | Please specify _____ | |

A2) What is the annual TURNOVER of your organisation?

- | | | | |
|-------------|--------------------------|------------|--------------------------|
| Under £10M | <input type="checkbox"/> | £1B-£9B | <input type="checkbox"/> |
| £10M-£49M | <input type="checkbox"/> | £10B-£49B | <input type="checkbox"/> |
| £50M-£99M | <input type="checkbox"/> | £50B-£99B | <input type="checkbox"/> |
| £100M-£499M | <input type="checkbox"/> | Over £100B | <input type="checkbox"/> |
| £500M-£999M | <input type="checkbox"/> | | |

A3) What is the NUMBER OF EMPLOYEES in your organisation?

- | | | | |
|----------|--------------------------|-------------|--------------------------|
| Under 50 | <input type="checkbox"/> | 1,000-4,999 | <input type="checkbox"/> |
| 50-99 | <input type="checkbox"/> | 5,000-9,999 | <input type="checkbox"/> |
| 100-499 | <input type="checkbox"/> | Over 10,000 | <input type="checkbox"/> |
| 500-999 | <input type="checkbox"/> | | |

A4) What is the annual NET PROFIT (PBIT) of your organisation?

- | | | | |
|---------|--------------------------|----------|--------------------------|
| 0%-2% | <input type="checkbox"/> | 20%-30% | <input type="checkbox"/> |
| 2%-5% | <input type="checkbox"/> | 30%-40% | <input type="checkbox"/> |
| 5%-10% | <input type="checkbox"/> | 40%-50% | <input type="checkbox"/> |
| 10-15% | <input type="checkbox"/> | Over 50% | <input type="checkbox"/> |
| 15%-20% | <input type="checkbox"/> | | |

A5) How has your organisation's NET PROFIT FLUCTUATED over the last few years?

- | | | | |
|-------------------------|--------------------------|-------------------------|--------------------------|
| Significantly increased | <input type="checkbox"/> | Significantly decreased | <input type="checkbox"/> |
| Slightly increased | <input type="checkbox"/> | Slightly decreased | <input type="checkbox"/> |
| No change | <input type="checkbox"/> | Decreased/increased | <input type="checkbox"/> |

A6) What is the OWNERSHIP STRUCTURE of your organisation?

- | | | | |
|------------------------|--------------------------|----------------|--------------------------|
| Privately Owned | <input type="checkbox"/> | Publicly Owned | <input type="checkbox"/> |
| Public/Privately Owned | <input type="checkbox"/> | | |

A7) What is the GEOGRAPHICAL FOCUS of your organisation? (tick all that apply)

- | | | | |
|----------------|--------------------------|----------------|--------------------------|
| UK only | <input type="checkbox"/> | Western Europe | <input type="checkbox"/> |
| Eastern Europe | <input type="checkbox"/> | North America | <input type="checkbox"/> |
| South America | <input type="checkbox"/> | Pacific Rim | <input type="checkbox"/> |
| Asia | <input type="checkbox"/> | Africa | <input type="checkbox"/> |

QUESTION 8: TYPE OF SOURCING

Please indicate with a tick the type of sourcing that takes place within your organisation and give examples of specific spend categories where each indicated option occurs.

| SOURCING DESCRIPTION | TICK BOX | EXAMPLES OF SPEND CATEGORIES WHERE THE SOURCING OPTION OCCURS |
|---|--------------------------|---|
| (a) The buyer selects products and services from offerings made by suppliers currently operating in the market. The supplier designs and specifies requirements, with the buyer's role limited to market analysis, supplier selection and performance monitoring of the first-tier supplier only. | <input type="checkbox"/> | |
| (b) Similar to (a), but the buyer is now involved in understanding the structure of the supply chain and the opportunities for leverage beyond first-tier suppliers. | <input type="checkbox"/> | |
| (c) After initial market analysis and supplier selection, the buyer works on a continuous basis with the first-tier supplier. The design and specification of the product or service, now and in the future, is determined by the buyer or is a joint effort. | <input type="checkbox"/> | |
| (d) Similar to (c), but the buyer now links together and coordinates all of the suppliers and buyers in the supply chain. | <input type="checkbox"/> | |

QUESTION 9: TYPE OF POWER RELATIONSHIP

Please indicate with a tick the type of buyer/supplier relationships that exist within your organisation and give examples of specific spend categories where each indicated option occurs.

| RELATIONSHIP DESCRIPTION | TICK BOX | EXAMPLES OF SPEND CATEGORIES WHERE THE RELATIONSHIP DESCRIPTION OCCURS |
|---|--------------------------|--|
| (a) The buyer controls the relationship with the supplier and dictates the price and quality trade-offs. There tends to be few buyers but many suppliers, the buyer constitutes a significant portion of the supplier's overall sales, the supplier is not seen as strategically important to the buyer, and it is easy for the buyer to switch to alternative sources of supply. | <input type="checkbox"/> | |
| (b) The buyer and supplier are both heavily dependent on one another and jointly deciding on price and quality trade-offs. There tends to be few buyers or suppliers, both parties are important to each other, and it is difficult or costly to switch to an alternative source of revenue or supply. | <input type="checkbox"/> | |
| (c) Neither the buyer nor the supplier shapes the relationship, price and quality issues being determined on the basis of market competition and contestation. There tends to be many buyers and suppliers, neither party is important to each other and it is easy to switch to an alternative source of revenue or supply. | <input type="checkbox"/> | |
| (d) The supplier controls the relationship with the buyer and price and quality issues are dictated by the supplier. There tends to be many buyers but few suppliers, the supplier constitutes a significant portion of the buyer's overall spend and it is difficult or costly to switch to an alternative source of supply. | <input type="checkbox"/> | |

Appendix B

The Summary Research Proposal

SUMMARY RESEARCH PROPOSAL

Background to the Research

There are four sourcing options available to an organisation: supplier selection, supply chain sourcing, supplier development and supply chain management. The aim of this research is to identify which of these approaches, if any, can lead to sustainable competitive advantage in order to determine whether sourcing policy can make a difference to an enterprise's strategic performance.

Sustainable competitive advantage is achieved by developing advantage-generating resources. Supply chain management is advantage-generating, as it encompasses knowledge-based systems and complex bundles of tacit capabilities, thereby making it heterogeneous, opaque and difficult to identify and copy. It is these characteristics that enable supply chain management to achieve sustainable competitive advantage, rather than the concept per se. It therefore follows that, if other sourcing options are also to achieve sustainable competitive advantage, then they too must comprise these distinctive capabilities.

Supplier development is a similar sourcing strategy to supply chain management, as it is a proactive approach based on integration and collaboration, albeit at a dyadic rather than network level. The proactive nature of supplier development facilitates the development of advantage-generating resources, but the dyadic emphasis limits their deployment. It can therefore be said that supplier development can achieve sustainable competitive advantage, but to a lesser degree than the supply chain management approach.

Whereas supplier development and supply chain management would appear to be strategically advantageous, the final two sourcing options do not seem to be so promising. Supplier selection and supply chain sourcing are reactive approaches based on market contestation and the opportunity to develop advantage-generating resources in these circumstances is limited. Although the latter approach involves the buyer looking beyond the first-tier supplier in order to identify leverage opportunities, thus expanding the opportunities to develop distinctive capabilities, it is still difficult to achieve heterogeneity, opacity and inimitability in these market-contested environments.

The power relationship between the buyer and supplier may be an important consideration. The literature review indicates that proactive sourcing strategies will only be successful in situations of buyer dominance or interdependence. This is because a beneficial power position enables the buying organisation to appropriate the value of the sourcing strategy. In situations of buyer dominance, the buyer can appropriate the majority of the value, but where interdependence exists, the value has to be shared.

Conclusion

The literature review has found that there are four sourcing strategies that organisations can adopt. Implemented in appropriate circumstances, supply chain

management can lead to high levels of sustainable competitive advantage. Supplier development is another proactive sourcing approach which, due to its similar characteristics, can also lead to sustainable competitive advantage, albeit to a lesser degree. The other two sourcing options, which are reactive and based on market contestation, are less likely to be strategically important.

The existing power relationship between the buyer and supplier has an effect on achieving sustainable competitive advantage. Proactive sourcing strategies will only be successful where buyer dominant or interdependent power relationships exist. It follows that organisations should aim to implement proactive sourcing strategies with a favourable power position wherever possible, but their ability to do so will be constrained by the characteristics of the market.

Research Questions

Based on the above conclusion, two research questions are put forward:

1. Proactive sourcing strategies lead to sustainable competitive advantage, but reactive approaches do not.
2. Proactive sourcing strategies only lead to sustainable competitive advantage if buyer dominant or interdependent power relationships exist.

Methodology

A preliminary survey has already taken place by means of a questionnaire administered to MBA students. The next stage of the research is to conduct detailed case study analyses of six organisations in order to prove or disprove the given research questions. Choosing the case study organisations carefully, it will be possible to ascertain the affect that the sourcing strategy and power position has on the achievement of sustainable competitive advantage across different supply chains within each enterprise and also across different sectors. This should ensure that the results are generalisable.

Benefits for the Participating Organisations

The participating organisations will essentially benefit from free consultancy work.

On a strategic level, each organisation can determine whether their sourcing strategies contribute towards achieving sustainable competitive advantage. Furthermore, they can compare their supply chain characteristics and performance with those of the other participating organisations. This will act as a useful external benchmarking exercise, enabling best practice to be identified, which can be built on and deployed internally if appropriate.

On an operational level, individual supply chains will be looked at and, where reactive sourcing strategies and unfavourable power positions exist, an investigation can be made as to whether alternative arrangements can be adopted that are more likely to lead to sustainable competitive advantage. This will be achieved by examining the market and product characteristics that prevail.

Appendix C

Case Survey Interview Questions

PRE-INTERVIEW GUIDELINES

Below is a list of questions that will be asked during the interview.

GENERAL BACKGROUND QUESTIONS

- 1) Background information on the industry, the organisation, its products and markets.
- 2) The role and scope of procurement activities within the organisation.

QUESTIONS ON SOURCING STRATEGIES

CBSB has identified four sourcing strategies: *supplier selection*, *supply chain sourcing*, *supplier development* and *supply chain management*.

- 3) What is the level of understanding within the organisation of each of the four sourcing strategies?
- 4) What is the level of support within the organisation for pursuing each of the four sourcing strategies?
- 5) Are there internal conformity pressures or barriers to adopting any of the sourcing strategies?
- 6) Are there external conformity pressures or barriers to adopting any of the sourcing strategies?

QUESTIONS ON PROCUREMENT DECISION-MAKING

- 7) To what extent do the following statements describe the decision-making processes of your organisation's procurement activities? (True or False)
 - (a) Driven by motives of efficiency, effectiveness and profitability.
 - (b) Driven by motives of historical precedence and social justification.
 - (c) Driven by short-cuts and rules of thumb.
 - (d) Driven by risk and ambiguity avoidance.

QUESTIONS RELATED TO SPECIFIC ITEMS OF SPEND

The preliminary survey indicated that you adopt [*sourcing strategy*] and [*sourcing strategy*] for some of your categories of spend. Please identify two major items of spend which conform to each of these sourcing strategies.

The following questions will be asked in relation to these items of spend.

Power Regime Mapping (For Each Stage of the Supply Chain)

Demand Side Analysis

- 8) How attractive is the buyer as a customer?
- 9) What is the nature of spend in terms of size, regularity and predictability?
- 10) Does the supplier gain any prestige value by association with the buyer?
- 11) How good is the buyer's information on the supply offering, particularly in terms of production costs?
- 12) Who controls the design and specification?

Supply Side Analysis

- 13) How many suppliers are there for the item of spend?
- 14) Can the supplier offer meaningful differentiation or are suppliers interchangeable?
- 15) Does technology or price competition differentiate the market?
- 16) Are there any market leaders and what would be their response to new entrants?
- 17) Are there any barriers to entry and, if so, how high are they?
- 18) Is substitution possible? Would it be possible to redefine design requirements?

Performance Evaluation of the Sourcing Strategy

- 19) What are the benefits of the sourcing strategy?
- 20) What are the drawbacks of the sourcing strategy?
- 21) What is the effect on functionality and cost?
- 22) To what extent is the sourcing strategy seen as successful by key decision-makers in the organisation?
- 23) Is it possible to determine the success of the sourcing strategy in financial terms?
- 24) Does the sourcing strategy lead to above normal profits over the long-term?
- 25) To what extent do the following statements describe the procurement activities that are undertaken within the sourcing strategy adopted? (True or false)
 - (a) The activities are unique in relation to your competitors.
 - (b) They have a uniqueness created over time through the development process of the activities.
 - (c) Competitors would be unable to identify the value of the activities.
 - (d) Competitors would not know how to recreate them.
 - (e) Large investments have been made in these activities.
 - (f) The value of the activities will not deteriorate quickly.
 - (g) The value of the activities can be appropriated by your organisation and does not need to be passed on to suppliers or customers.
 - (h) The activities cannot be substituted by alternatives.
 - (i) The activities are superior to those of your competitors.
- 26) How would the answers to Questions 19 to 25 differ when or if the item was sourced using the "supplier selection" approach?

Appendix D

The Power Templates

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Power Templates

Buyer Element 1: Buyer Position

The two main resources that determine the buyer's relative position are :

- a) its knowledge of the supply market and the supplier, and
- b) its importance to the supplier as a customer

HOW EXTENSIVE IS THE BUYER'S KNOWLEDGE OF THEIR SUPPLY BASE?

Limited

Comprehensive

IS THE SUPPLIER'S DEMAND CONCENTRATED?*

Yes

No

Buyer's Position
Potentially Powerful

Buyer's Position
Powerful

Buyer's Position
Weak

Buyer's Position
Uncertain

| | |
|--------|---|
| 81-100 | Buyer is the major source of business for the supplier and has good information about the supplier and supply base. |
| 61-80 | Buyer is the major source of business for the supplier but has poor information. |
| 46-60 | Buyer is an important customer for the supplier and has good information. |
| 31-45 | Buyer is an important customer but has poor information. |
| 16-30 | Buyer is only a minor source of business for the supplier but has good information. |
| 1-15 | Buyer is only a minor source of business for the supplier and has poor information. |

Supplier Element 1: Competition in Existing Supply Base

The first of the three main elements that helps to determine the supplier's power is the structure of competition in the supply market. Two main issues are important here:

- What is the state of competition in the supply market, and what is the position of the supplier within that supply market?
- Where there is competition in the supply market is there any evidence to suggest that there is collusion occurring in the

| | |
|--------|--|
| 91-100 | The supplier is a monopolist or clear market leader for this product or service and there is no prospect of another supplier emerging to challenge its position. |
| 81-90 | The supplier is a monopolist or clear market leader for this product or service but their lead is only likely to be temporary. |
| 61-80 | There is no clear leader for this product or service but there is good evidence to suggest that suppliers collude to keep margins high. |
| 31-60 | The supplier is not a market leader for this product or service / there is no market leader and there is a degree of competition in the market. |
| 1-30 | The supplier is not a market leader for this product or service / there is no market leader |

Supplier Element 2: Potential New Entrants

The second of the three main elements that helps to determine the supplier's power is the barriers of entry to new competition in the supply market. Two main issues are important here:

- How high are the barriers?
- How is the existing supply base likely to respond to the new competitive threat?

If the barriers to entry in this market are high and existing suppliers tend to respond in a hostile fashion to new competition.

76-100

If the barriers to entry in this market are high but there is no evidence to suggest that existing suppliers tend to respond in a hostile fashion to new competition.

51-75

If the barriers to entry in this market are medium to low.

26-50

If there are few or no barriers to entry in this market.

0-25

Supplier Element 3: Substitutes

This refers to the existence of alternative goods and services to those being offered by suppliers in the industry:

E.g.

- Road, Rail
- TV/Radio Advertising
- Books/CD-ROMs

The key element here is that there are alternative ways of meeting a customer's functional requirements. **Therefore, this does not concern the existence of other suppliers providing the same product or service**

If there are no substitutes for this product and your firm could not redesign/redefine its requirements so that there were some.

76-100

If there are no substitutes for this product but your firm could redesign/redefine its requirements so that there were some.

51-75

If there is a limited supply of substitutes for this product.

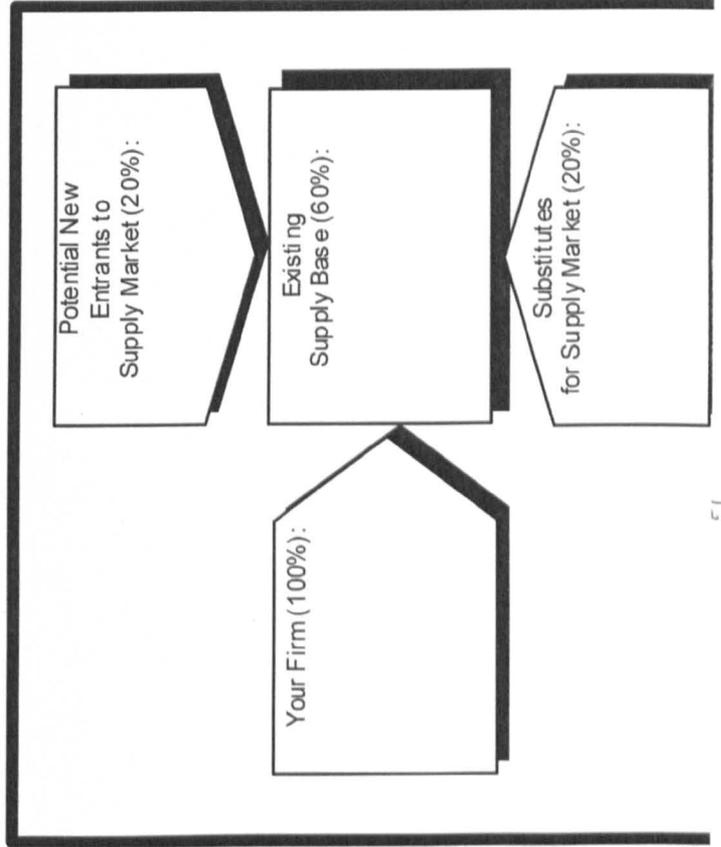
26-50

If there are many substitutes for this product.

0-25

Power Templates

Results Table



Buyer Rating:

Composite Supplier Rating:

Buyer Dominance (Hi-Lo)

Buyer-Supplier Interdependence (Hi-Hi)

Buyer-Supplier Interdependence (Lo-Lo)

Buyer Dependence (Lo-Hi)

Appendix E

Case Survey Interview Details

CASE 1: CHEMICAL SOURCING AT BLENDCO

The Interviews

- 1a: Richard Southgate, Head of Purchasing, 20 November 2003 & 2 May 2006.
- 1b: Dave Tomkins, Category Manager, 20 November 2003 & 17 August 2006
- 1c: Sarah Whitefield, Purchasing Business Manager, 4 April 2006
- 1d: Mike Harris, Operations Director, 2 May 2006
- 1e: Derek Kirby, Operations Manager, 17 August 2006

CASE 2: DRILLING MUD SOURCING AT EXTRACTCO

The Interviews

- 2a: Granville Clutterbuck, Purchasing Advisor, 6 April 2004 & 7 June 2006
- 2b: Colin Aspinall, Project Manager, 1 March 2006
- 2c: Andy Leonard, Programme Director, 2 March 2006
- 2d: Harry Benham, Supply Chain Director, 7 June 2006
- 2e: Richard Forster, Project Manager, 25 September 2006

CASE 3: FACILITIES MANAGEMENT SOURCING AT INDIRECTCO

The Interviews

- 3a: Jim Black, Purchasing Policy Manager, 20 May 2004 & 15 June 2006
- 3b: Denise Conn, Purchasing Advisor, 14 March 2006
- 3c: Leon Sanchez, Purchasing Manager, 14 March 2006
- 3d: Andrew Boyd, Commercial Director, 15 June 2006
- 3e: Douglas Frost, Facilities Manager, 4 July 2006

CASE 4: LOW LEVEL LEGAL SERVICES SOURCING AT INDIRECTCO

The Interviews

- 4a: Jim Black, Purchasing Policy Manager, 20 May 2004 & 15 June 2006
- 4b: Paul Baddeley, Head of Legal, 4 October 2006
- 4c: Hilary Edwards, Managing Council, 4 October 2006
- 4d: Megan O'Carroll, Purchasing Advisor, 9 November 2006
- 4e: Thierry Vorgers, Strategy and Planning, 14 November 2006

CASE 5: MECHANICAL & ELECTRICAL COMPONENTS SOURCING AT MECHCO

The Interviews

- 5a: Derek Valentine, Design Coordinator, 7 October 2004 & 20 April 2006
- 5b: James Smith, Buyer, 20 April 2006
- 5c: Yasmin Parapia, Buyer, 16 May 2006
- 5d: Phil Bowman, Project Manager, 9 June 2006
- 5e: Dave Potter, Project Manager, 6 September 2006

CASE 6: READY MIXED CONCRETE SOURCING AT PRIMECO

The Interviews

- 6a: Gerry Walsh, Head of Supply Chain, Company A, 18 November 2004
- 6b: James Harboard, Head of Procurement, Company A, 23 February 2006
- 6c: Colin Stainthorpe, Supply Chain Manager, Company D, 8 March 2006
- 6d: Paul Neal, Project Director, Company A, 1 June 2006
- 6e: Frank Hesketh, Project Manager, Company D, 13 July 2006

CASE 7: POTATO SOURCING AT FOODCO

The Interviews

- 7a: Anne-Marie Neale, Category Manager, 15 October 2003 & 6 July 2006.
- 7b: Justin Bowles, Category Manager, 15 October 2003 & 18 May 2006.
- 7c: Adrian Howard, Procurement Manager, 25 April 2006
- 7d: Donna Lupton, Business Manager, 18 May 2006
- 7e: Neal Hope, Operations Director, 6 July 2006

CASE 8: CARTON AND SLEEVE PACKAGING SOURCING AT FOODCO

The Interviews

- 8a: Anne-Marie Neale, Category Manager, 15 October 2003 & 6 July 2006.
- 8b: Justin Bowles, Category Manager, 15 October 2003 & 18 May 2006.
- 8c: Adrian Howard, Procurement Manager, 25 April 2006
- 8d: Donna Lupton, Business Manager, 18 May 2006
- 8e: Neal Hope, Operations Director, 6 July 2006

CASE 9: ENERGY SOURCING AT BLENDCO

The Interviews

- 9a: Richard Southgate, Head of Purchasing, 20 November 2003 & 12 April 2006
- 9b: Monica Fitt, Category Manager, 5 April 2006
- 9c: Paul Connor, Purchasing Business Manager, 12 April 2006
- 9d: Mike Harris, Operations Director, 2 May 2006
- 9e: Derek Kirby, Operations Manager, 17 August 2006

CASE 10: LIFE OF FIELD SEISMIC IMAGING SOURCING AT EXTRACTCO

The Interviews

- 10a: Tim Jackson, Project Manager, 21 April 2004 & 15 November 2006
- 10b: Andy Leonard, Programme Director, 2 March 2006
- 10c: Harry Benham, Supply Chain Director, 7 June 2006
- 10d: Granville Clutterbuck, Purchasing Advisor, 11 July 2006
- 10e: Richard Seaborn, Project Manager, 14 September 2006

CASE 11: ACCOUNTS PAYABLE SOURCING AT INDIRECTCO

The Interviews

- 11a: Jim Black, Purchasing Policy Manager, 20 May 2004 & 15 June 2006
- 11b: Denise Conn, Purchasing Advisor, 14 March 2006
- 11c: Leon Sanchez, Purchasing Manager, 14 March 2006
- 11d: Tony Bartlett, Finance Director, 24 May 2006
- 11e: Frances Abbiatti, Finance Manager, 28 June 2006

CASE 12: HIGH LEVEL LEGAL SERVICES SOURCING AT INDIRECTCO

The Interviews

- 12a: Jim Black, Purchasing Policy Manager, 20 May 2004 & 15 June 2006
- 12b: Paul Baddeley, Head of Legal, 4 October 2006
- 12c: Hilary Edwards, Managing Council, 4 October 2006
- 12d: Megan O'Carroll, Purchasing Advisor, 9 November 2006
- 12e: Thierry Vorgers, Strategy and Planning, 14 November 2006

Appendix F

Critical Case Interview Outline

CRITICAL CASES INTERVIEW OUTLINE

1) Preamble

Explanation of the research aims and the general survey findings

2) Open Time

Interviewee to explain how they think: (i) the category of spend and (ii) the sourcing strategy adopted does or does not assist sustainable competitive advantage.

3) How is the sourcing strategy measured?

Profitability?
Cost reduction?
Market closure?
Increased revenue?
Differentiated product?
Increased capability?
Other?

4) Discussion of the sourcing strategy's score on the advantage-generating tests.

Discuss the outcome of each test in detail

5a) What internal/external constraints prevent the sourcing strategy from achieving SCA? (low-scoring sourcing strategies)

or

5b) What internal/external factors enable the sourcing strategy to achieve SCA? (high-scoring sourcing strategies)