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How the transaction cost and resource-based theories of the firm inform outsourcing evaluation

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ABSTRACT

Transaction cost economics (TCE) and the resource-based view (RBV) of the firm have been extremely influential in the study of outsourcing both in theory and practice. This paper argues that neither transaction cost economics nor the resource-based view alone can fully explain the complexities of outsourcing. A review and critique of these theories as a means of understanding the complexities of outsourcing is presented. A prescriptive framework for outsourcing evaluation is presented, which was developed from integrating TCE and the RBV, and carrying out in-depth case study research in a number of organizations. The research findings emphasize the utility of integrating TCE and the RBV, and highlight the importance of operations management concepts such as performance management, operations strategy, business improvement and process redesign to the study of outsourcing. However, the findings have shown that these theories should be applied with caution due to contradictory prescriptions in some instances.

1. Introduction

The drive for greater efficiencies and cost reductions has forced many organizations to specialize in a limited number of key areas. This has led organizations to outsource activities and services traditionally carried out in-house. Although the term outsourcing has been in vogue in the last number of years, organizations have always made decisions on determining the boundary of the organization. However, rapidly developing product and service markets – both locally and offshore – and developments in information and communications technologies (ICTs) have accelerated the growth in outsourcing to encompass almost every organizational activity (Aron and Singh, 2005). Outsourcing has moved on from focusing on peripheral activities such as cleaning, catering and security, to encompass more critical business activities such as design, manufacture, marketing, human resource management and logistics. Many organizations are increasingly considering outsourcing as a critical element of their organizational strategy (Holcomb and Hitt, 2007). Outsourcing is regarded as a powerful vehicle to reduce costs and improve performance. For example, specialists in supply markets can develop greater knowledge depth, invest more in software and training systems, be more efficient, and therefore offer higher salaries and attract more highly trained people than many integrated companies (Quinn, 1999). Outsourcing can also be employed to cope with demand uncertainty and to obtain the benefits of supplier scale economies in a range of business areas.

The study of outsourcing has become a rich tapestry of theoretical and conceptual foundations, drawing on theories from a range of disciplines such as economics, business strategy, organization theory and general management. Two influential theories in the study of outsourcing have been transaction cost economics (TCE) and the resource-based view (RBV) of the firm. Both these theories make a valuable contribution to understanding outsourcing. TCE specifies the conditions under which an organization should manage an economic exchange

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internally within its boundaries, and the conditions suitable for managing an economic exchange externally, i.e. outsourcing (Williamson, 1975, 1985). TCE argues that organizations should consider the level of transaction-specific investment in the economic exchange as the principal determinant of whether an economic exchange should be managed internally within the organization. An alternative theory to understanding the outsourcing decision is the RBV, which views the firm as a bundle of assets and resources that, if employed in distinctive ways, can create competitive advantage (Peteraf, 1993; Barney, 1991). The RBV is important to the study of outsourcing, as superior performance achieved in organizational activities relative to competitors, would explain why such activities are internalized within the organization. The core competence concept developed by Hamel and Prahalad (1994) – which has evolved from the RBV – has been extremely influential in outsourcing practice, with the distinction between core and non-core business firmly established in the lexicon of many practitioners.

The research presented in this paper has evolved from a research project concerned with analyzing both the theoretical and practical influences on outsourcing in a range of organizations. The paper presents a prescriptive outsourcing framework, which is derived from integrating variables from TCE and the RBV, and undertaking in-depth case study analysis of three organizations that have been involved in extensive outsourcing. The findings show that neither TCE nor the RBV alone adequately explain the complexities of outsourcing. The research makes a number of important contributions. Firstly, it enriches our understanding of the influence of TCE and the RBV in outsourcing decisions. The variables associated with each of these theories were present in the outsourcing decisions of each company studied. Indeed, the findings in a number of the companies studied have shown that appreciation of these theories is both necessary and complementary for making outsourcing decisions. These theories also highlight the importance of operations management concepts such as performance management, operations strategy, business improvement and process re-engineering to outsourcing. However, the findings have revealed that organizations can make outsourcing decisions, which are based solely on variables associated with a single theoretical standpoint. This is an important area for further research, as in some outsourcing decision-making contexts the predictions of each theory can be contradictory.

Secondly, the research makes a contribution to an area that has received limited attention from operations management scholars (Holcomb and Hitt, 2007). A number of scholars in the operations field have argued that more research should be carried out examining the influence of theories from economics and strategic management (Grover and Malhotra, 2003). Although a number of authors have employed TCE and the RBV in an operations management context (Vivek et al., 2008; Holcomb and Hitt, 2007; Jiang et al., 2007; Hayes et al., 2005; Grover and Malhotra, 2003; Williams et al., 2002; Coates and McDermott, 2002; Vastag, 2000), none of these studies use both these theories to develop a prescriptive outsourcing framework. Traditionally, operations management has focused on the make-or-buy decision in a manufacturing context (Powell Mantell et al., 2006). However, in an era of large-scale manufacturing and services outsourcing, both locally and offshore, there is an increasing recognition that operations management scholars should employ multiple theories from disciplines such as strategy, economics and organizational behavior to study outsourcing (Ellram et al., 2008; Youngdahl and Ramaswamy, 2008). The research presented in this paper further enhances our understanding of outsourcing in the context of operations management research using TCE and the RBV. Both of these theories are focusing on important concerns for operations management scholars, including the development and leveraging of capabilities for competitive advantage, and understanding where it is appropriate to pursue efficiencies, and where it is appropriate to pursue collaborative relations with suppliers.

Thirdly, the research in this paper has addressed an important area for practitioners. As organizations increasingly outsource more critical business areas such as design and customer relationship management, they are seeking to leverage a greater level of value from outsourcing. Although cost concerns are still important motivations for outsourcing in many contexts, the implications for the long-term capabilities of the company have to be considered. The outsourcing framework developed in this paper provides a valuable basis for practical prescription, which recognizes both capability and opportunism considerations. In particular, it provides a mechanism for understanding which activities should be internalized or outsourced, based on organizational capability considerations rather than on opportunism concerns alone. It also highlights the different outsourcing relationship configurations available, based on the need to either reduce cost or create value.

This paper considers outsourcing from a strategic perspective, which involves employing outsourcing not only to reduce costs, but also to allow an organization to develop a range of capabilities and leverage the specialist capabilities of suppliers (Holcomb and Hitt, 2007). The research focuses on the evaluation phase of the outsourcing process, which involves assessing whether outsourcing an activity is appropriate for an organization. This involves considering issues such as the capability of the organization in the activity relative to competitors, the impact of the activity on competitive advantage, the capability of suppliers to provide the activity, supply market conditions, and selecting the most appropriate relationship strategy. The paper is structured as follows. In the review of the literature, the characteristics and limitations of TCE and the RBV as a means of understanding outsourcing are outlined. An overview of the case organizations and outsourcing decisions studied is presented. This is followed by an overview of the measures and the outsourcing framework developed from TCE and the RBV, and the analysis of the case study organizations. In the next section, the theoretical implications of the research are explored, and areas for future research are proposed.

1.1. Transaction cost economics

In the TCE approach, the properties of the transaction determine what constitute the most efficient governance structure—market, hierarchy or alliance (Williamson, 1975). The primary factors producing transactional difficulties include bounded rationality, opportunism, small numbers bargaining, and information impactedness. Bounded rationality and opportunism are behavioral assumptions. Bounded rationality refers to the cognitive limitations of the human mind, which increases the difficulties of understanding fully the complexities of all possible decisions. Opportunism refers to decision makers acting with guile, as well as out of self-interest. Small numbers bargaining refers to the degree to which the buyer has alternative sources of supply to meet its requirements. Information impactedness refers to the presence of information asymmetries between the buyer and supplier, which means that either party may have more knowledge than the other. These transaction difficulties and associated costs increase when transactions are characterized by asset specificity, uncertainty and infrequency.

Asset specificity refers to the level of customization associated with the transaction. Highly asset-specific investments represent costs that have little or no value outside the transaction. The costs can be in the form of physical asset specificity (level of product or service customization), human asset specificity (level of specialized knowledge involved in the transaction) or site specificity (location). Asset specificity can be non-specific (highly standardized), idiosyncratic (highly customized to the organization) or mixed (incorporating standardized and customized elements in the transaction). TCE asserts that the potential for opportunistic behavior is most likely when an exchange requires one or both parties to make significant transaction-specific investments, since such investments create quasi-rents that are subject to the hold-up problem (Klein et al., 1978). When asset specificity and uncertainty is low, and transactions are relatively frequent, transactions will be governed by markets. Hierarchical governance occurs when uncertainty and high asset specificity lead to transactional difficulties. Medium levels of asset specificity lead to bilateral relations in the form of co-operative alliances between the organizations—intermediate governance.

Although asset specificity, uncertainty and frequency are all important variables, asset specificity is regarded as the most critical. Williamson (1981) argues that 'a considerable amount of explanatory power turns on' the asset specificity variable with neither uncertainty nor frequency – alone or in combination – leading to hierarchical governance. When asset specificity is high, it is likely that hierarchical governance will be chosen, as the specific assets are costly to re-deploy in alternative uses. Many empirical studies investigating the influence of asset specificity on firm boundaries have supported Williamson's view that high asset specificity leads to hierarchical governance (Rindfleisch and Heide, 1997; Clark et al., 1996; Shelanski and Klein, 1995). However, studies into the influence of uncertainty and frequency have been less conclusive. Investigations into the influence of frequency and hierarchical governance have not found a positive relationship (Rindfleisch and Heide, 1997). Some studies have found that uncertainty may reduce the level of hierarchical governance (Harrigan, 1986), whilst others have found that uncertainty can increase the use of hierarchical governance (Walker and Weber, 1987).

1.2. The resource-based view

Resource-based theorists view the firm as a unique bundle of assets and resources that, if employed in distinctive ways, can create competitive advantage (Peteraf, 1993; Conner, 1991; Barney, 1991). According to Barney (1991), a resource with the potential to create competitive advantage must meet a number of criteria, including *value*, *rarity*, *imitability* and *organization*. Resources and capabilities are considered valuable if they allow an organization to exploit opportunities and counter threats in the business environment. The rarity criterion is related to the number of competitors that possess a valuable resource. Clearly, where a number of competitors possess a valuable resource, then it is unlikely to be a source of competitive advantage. The imitability criterion is concerned with considering the ease with which competitors can replicate a valuable and rare resource possessed by an organization. In effect, this analysis is concerned with determining the sustainability of the competitive advantage in the resource. Finally, Barney (1991) argues that a firm must be organized to exploit its resources and capabilities. The organization criterion includes a number of elements, including the reporting structure, management control systems and compensation policies.

The RBV is important to the study of outsourcing, as superior performance achieved in organizational activities relative to competitors would explain why such activities are performed internally. A major concern of the RBV is how an organization's capabilities develop and affect its competitive position and performance. Employing the logic of the RBV, Langlois and Robertson (1995) have argued that firm boundaries can be determined by comparing internal capabilities with the capabilities of competitors. Therefore, the outsourcing decision is influenced by the ability of an organization to invest in developing a capability and sustaining a superior performance position in the capability relative to competitors. Activities in which the organization lacks the necessary resources or capabilities internally can be outsourced. Organizations can access complementary capabilities from external providers where they can gain no advantage from performing such activities internally.

1.3. The relationship between TCE and the RBV

Some of the proponents of the RBV have argued that it is more appropriate for explaining the boundary of the firm than TCE. For example, in a critique of TCE, Conner (1991) argued that TCE emphasized the existence of firms as a way of minimizing the opportunistic potential that arise when asset-specific investments are made. She also argued that

TCE viewed the firm as an avoider of negative opportunism, whilst the RBV viewed the firm as a bundle of valuable strategic resources inside the firm that create competitive advantage. In some instances the prescriptions of TCE and the RBV in relation to boundary choice can be contradictory. Conner and Prahalad (1996) have argued, from the perspective of the RBV, that retaining an activity inside the organization can be more appropriate, even when there is no potential for opportunism. The prescriptions of each theoretical standpoint can also differ in relation to inter-organizational collaboration. From the resource-based perspective, collaboration allows an organization to access complementary capabilities in a situation where there are resource constraints.

A growing body of literature now exists in the area of inter-organizational relationships (Casson, 1998; Dyer and Singh, 1998; Poppo and Zenger, 1998). Proponents of this literature – sometimes referred to as the relational view – propose it is a means of understanding how firms can gain and sustain competitive advantage. For example, Dyer and Singh (1998) argue that it is possible for organizations to combine resources in unique ways across organizational boundaries to obtain an advantage over their competitors. The relational view has evolved from the limitations of TCE in relation to potential governance structures and as an extension to the RBV. In contrast, from the TCE perspective, collaboration should be employed to minimize the cost of governing the activity (Madhok, 2002). Therefore, organizations can be confronted with conflicting prescriptions. Resource constraints may direct an organization towards collaboration in a situation where collaboration is not an efficient response to the exchange conditions (Combs and Ketchen, 1999).

So far, the discussion has treated TCE and RBV as independent approaches to the outsourcing decision. However, there is a growing body of literature arguing that TCE and the RBV are complementary—which is based on the recognition that each theoretical perspective alone cannot fully explain the outsourcing decision (Ellram et al., 2008; Vivek et al., 2008; Holcomb and Hitt, 2007; Jacobides and Winter, 2005; Madhok, 2002; Combs and Ketchen, 1999; Poppo and Zenger, 1998). In some instances, the prescriptions offered by each theoretical standpoint can be complementary. For example, in a case where an organization has the resource required to develop a difficult-to-imitate capability and the potential for opportunism is high, the activity should be internalized. The complementary nature of each theoretical standpoint is based on the premise that specific assets and distinctive capabilities share a similar characteristic—they are difficult to trade or imitate (Peteraf, 1993). Some have argued that neither theoretical perspective can fully explain collaboration, and that both perspectives are required (Combs and Ketchen, 1999). TCE focuses primarily on the role of efficient governance – through transaction analysis – in explaining firms as institutions for organizing economic activity, whilst the RBV focuses on the search for competitive advantage, through resource analysis. In effect, TCE is focusing primarily on governance skills, whilst the RBV focuses primarily on production skills. In addition, outsourcing decisions in practice are being influenced by both capability considerations and TCE variables such as asset specificity and a small number of suppliers (McNally and Griffin, 2004; Madhok, 1996).

Although TCE and the RBV are focusing on two different issues, (1) why firms exist and (2) why firms differ in performance, these two issues are very relevant to the field of operations management and the outsourcing decision. Research has found that practitioners are increasingly considering organizational capabilities and the potential for opportunism from suppliers when making outsourcing decisions (McNally and Griffin, 2004). The influence of the RBV has also been increasing in prominence in the operations management area. Some have argued that the operations area is at the heart of developing organizational capabilities that create competitive advantage (Lowson, 2002; Coates and McDermott, 2002; Vastag, 2000). Many of the exemplars of superior capabilities in the resource-based literature such as service excellence, innovation and rapid time-to-market cycles, are closely related to operations management. The development of capabilities is strongly influenced by competitive priorities (such as cost, quality, flexibility and delivery) which are at the heart of an organization's operations strategy (Boyer and Pagell, 2000; Leong et al., 1990). Focusing on and developing certain capabilities is central to the RBV, which in turn has important implications for which activities should be performed internally and which should be outsourced. The RBV can assist with analyzing organizational capabilities, which can link outsourcing with performance and the competitive priorities of the organization.

Of course, organizations can employ outsourcing as a means of achieving performance improvements in the areas of cost, service and quality. However, the potential for performance improvements has to be balanced against the prevailing conditions in the supply market. TCE provides a powerful theoretical lens to augment this analysis. As well as assisting in assessing supplier performance, TCE can enhance our understanding of whether it is more appropriate to insource or outsource an activity (Stratman, 2008; Grover and Malhotra, 2003). In relation to the supply market conditions, combining both TCE and the RBV can extend the potential relationship strategies available to an organization when outsourcing is deemed a potential option. TCE provides a sound theoretical basis for analyzing market versus hierarchical mechanisms in the outsourcing decision, whilst from the perspective of the RBV, inter-organizational collaboration can be employed to access and develop complementary resources that contribute to competitive advantage (Barney, 1991). Although TCE and the RBV have been gaining prominence in the operations management area (Vivek et al., 2008; Holcomb and Hitt, 2007; Jiang et al., 2007; Hayes et al., 2005; Grover and Malhotra, 2003; Williams et al., 2002; Coates and McDermott, 2002; Vastag, 2000), none of these studies have employed both these theories to develop a prescriptive framework for outsourcing evaluation. The research presented in this paper develops an outsourcing framework, which is based on integrating the logic of TCE and the RBV, and carrying out empirical research in a number of organizations that have been involved in outsourcing.

2. Research method

A case study approach was chosen to undertake the research. Use of the case study approach allows an increase in the quality and quantity of data obtained (Gummesson, 1991). The case study approach allows the researcher to analyze relationships and social processes that is not possible via a quantitative approach alone (Miles and Huberman, 1994). In-depth case study research was conducted with three organizations including a telecommunications equipment manufacturer, a forklift truck manufacturer and a privatized utility company. For purposes of confidentiality, the organizations are referred to as *Case 1*, *Case 2* and *Case 3*. These organizations were chosen for a number of reasons. Each company had already outsourced a range of their operations. Changes in both the internal and external environments had led to these organizations outsourcing activities to meet the increasing demands of their stakeholders. For example, privatization had led to a significant impetus in the utility company for performance improvements from the industry regulator, whilst the telecommunications equipment manufacturer and the forklift truck manufacturer had been experiencing increasing competition and more demanding customers in their respective environments. The research team already had strong relationships with these organizations. Through preliminary interviews the research team established relationships with key personnel in these organizations, which facilitated their full access and participation in the research. Gaining full access to personnel across the organizations facilitated the collection of data from multiple informants, which increased the quality of data collected (Eisenhardt, 1989).

2.1. Data collection

The first stage of the data collection phase involved collecting data on the background and overall strategy of the company. This involved gathering data on influences from the industry environment such as customer demands, competitor actions, technology changes and government. Particular attention was given to the link between the strategy of each company and the drive towards outsourcing. Outsourcing decisions were chosen in each company in a number of areas including *Case 1*, Application Specific Integrated Circuits (ASICs) design and Logistics; *Case 2*, Castings and Chassis; *Case 3*, Facilities management (FM) and Billing/Revenue. These decisions were chosen for a number of reasons. Many of the personnel who were involved in these outsourcing decisions were still employed by the organizations. Full access was granted to these personnel, which would facilitate the collection of data at the level of quantity and quality required. A number of sources were used for data collection in each company. The primary data collection source was via semi-structured interviews. An interview questionnaire based on the literature was designed and served as an interview guide. Refer to Appendix A. The interview questions were developed from variables associated with TCE and the RBV. In-depth face-to-face interviews were carried out to examine the presence of these variables on the outsourcing decisions studied in each company. Forty-eight interviews were then carried out with both senior managers who were involved in formulating strategy, and with personnel from a range of functions at lower levels in the organizations, who were involved in implementing the outsourcing decision. Semi-structured interviews took place with each of the personnel involved, with the intention that personnel would freely express their views and experiences on the outsourcing decision. The interviews normally lasted from 1 to 3 h and were transcribed. Gathering this data involved a great deal of interaction between the researchers and the staff in each company. Data was also collected from a number of other sources. Each company provided access to a range of documented material detailing the rationale for their outsourcing strategies. Archival data in the form of internal memoranda, annual reports, strategy documents, supplier evaluations, trade and internal company magazine articles were also collated.

2.2. Data analysis and validation

Case studies were developed from both interviews undertaken with personnel involved in the outsourcing decisions and the archival data gathered. Using Eisenhardt's (1989) guidelines on case study analysis, within-case analysis and cross-case analysis was carried out, to determine the presence of TCE and RBV variables in the outsourcing decisions. This analysis was important in developing the measures and the decision paths in the prescriptive outsourcing framework. As part of this analysis, follow-up interviews were undertaken to discuss both earlier responses and those of other informants. These interviews often involved additional questions based on information obtained from earlier interviews. A key strength of this approach was that it allowed the triangulation of data from multiple informants. Various charts, tables and figures were developed and used in the data analysis phase. Tests of construct validity, internal validity, external validity and reliability were employed to validate the research findings (Stake, 1995; Yin, 1984). To ensure construct validity, multiple sources of evidence including the interviews and archival data were used to triangulate data. Internal validity was ensured by using within-case analysis and then through cross-case analysis, to develop the measures and the outsourcing framework. Each case was further investigated through multiple interviews and additional visits to the case companies, to review the findings. To ensure external validity, the study used replication logic to conduct and analyze each of the case studies. To increase reliability, all procedures were applied consistently across all cases, including the preparation of interviews and semi-structured questionnaires, and data collection and analysis.

The following sections present the findings from this analysis:

- *The case companies and their outsourcing decisions*. This section provides an overview of the case companies and the outsourcing decisions studied.
- *The measures*. This section provides an overview of the development of the measures based upon an analysis of the case companies and TCE and the RBV.

- *A framework for outsourcing evaluation*. A description of the framework, along with illustrations from the outsourcing decisions studied and extant literature is presented in this section.

3. The case companies and their outsourcing decisions

3.1. Case one

This case focuses on the strategic business unit (SBU) of a telecommunications equipment manufacturer that designs and manufactures complex products for telecommunications applications. An increasing emphasis on cost reduction and time to market on its product portfolio was driven by considerable growth in demand and increasing competition. The company was therefore forced to consider outsourcing a number of areas. One outsourcing decision involved the design of ASICs. Effective design of these components involves constant interactions and the sharing of specialist knowledge between designers and other functions including engineering, software design and manufacturing. Although there may be only a few of these component types on each manufactured printed circuit board (PCB), each of these components can account for over 15% cost of the total PCB cost. Crucially, advances in the design of these components can lead to the development of a more functional and lower cost product. However, the company had been under considerable pressure to achieve advances in the design of these specific components, due to a high level of competition in the marketplace. Senior management believed that a more focused approach should be taken to allocate design resource in areas that could promise long-term value for the company. At the same time, suppliers were becoming more competent in the design of these components, and were proactively encouraging their customers to allow them to design as well as manufacture these components. Indeed, some managers believed that suppliers were capable of undertaking more design, as evidenced by the following comment: '*...if we concentrate our purchasing power on a few suppliers, then we can influence their technology roadmaps and R&D activities. Essentially, they will do some of the R&D for us...*'. Extensive analysis of its own capabilities in ASICs design had revealed that it was marginally more capable than a number of its competitors. The analysis had also revealed that two of its direct competitors had been investing in this area.

The company decided to retain this design capability internally, and allocate additional resource to build upon its current position. By divesting its capability in this area, the company believed it would potentially lose a source of competitive differentiation. Although the company was aware of supplier capabilities, it believed it would lose important knowledge in this design process. The learning and knowledge accumulated in the design process could also be exploited in the design of other components. The company believed that further investment would strengthen its capability. As part of this strategy, the company placed considerable emphasis on better accessing the capabilities of suppliers, as evidenced by the following comment from a senior manager: '*... there's nothing to prevent us from picking these suppliers before the product enters development...Pre-selecting suppliers before we start design would help us tremendously in both our time to market and product cost initiatives...*'. Therefore, the company adopted a more formal approach with a limited number of suppliers, to leverage more fully the expertise of suppliers, rather than outsourcing the design process.

Another outsourcing decision involved the area of logistics. Although the company at corporate level had invested considerable resource in logistics, senior management believed they could achieve performance improvements by outsourcing logistics processes to external service providers. The company also wanted a situation where supply management was involved in more value adding type activities such as new product development, as evidenced by a comment from a senior manager: '*...the benefit to us is the re-allocation of the buyer's efforts towards New Product Introduction*'.... As part of the outsourcing process, management at corporate level evaluated a number of global logistics service providers (LSPs). This analysis revealed a number of potential service providers that would provide higher levels of service to its manufacturing sites globally. The company established a strategic alliance with one of these LSPs for the supply of logistics services. The LSP chosen was one the world's largest distributor of electronic components to customers in the US, Europe and Asia. The LSP had developed a range of capabilities to become an integral part of the supply chain, providing support and delivering services and products which impact every part of the manufacturing cycle from R&D right up to the point of manufacture.

Implementing this arrangement involved the SBU at local level outsourcing many logistics activities, including inventory management, quality inspection and expediting activities. In effect, the LSP would act as the interface between the SBU and each component supplier, which involved maintaining and managing an onsite store of items. The SBU at local level had to make a number of changes to its order management and information systems, to establish and manage the new arrangement. Although there were a number of other potential LSPs to switch if the arrangement failed, there would have been considerable costs incurred in doing so. In addition, much of the impetus for outsourcing this area had come from corporate level, with the arrangement being implemented at many of the company's plants corporate-wide. There was a concern at local level that it might not have obtained the level of attention and service because of its size relative to other plants in the corporate fold. Many of its sister plants were much larger, and would therefore have possessed a higher level of leverage with the LSP.

3.2. Case two

This case focuses on a global manufacturer of forklift trucks, with manufacturing plants located in the US and Europe. In response to increasing competition the company had been investing resource in product and process design, to improve performance in areas such as hydraulics, engine and power train systems. A major strategy driver from corporate level had been the need to

aggressively drive down costs. Many of its plants had to outsource component manufacture and assembly operations to lower cost regions such as China and Eastern Europe, to meet these targets. Senior management at corporate level considered manufacturing areas as potential candidates for outsourcing, where suppliers could achieve lower costs and comparable quality levels. In fact, manufacturing within the company was increasingly being described as non-core, as evidenced by a comment from a plant manufacturing manager: '*. . .I think, at the end of the day manufacturing as a whole has probably been considered non-core. . .*'. This case focuses on the outsourcing strategy of one of its major plants in Europe.

One decision involved the outsourcing of castings to China. In response to pressures for operational efficiencies, the plant examined a number of areas for outsourcing, including standard castings. The company produced some castings in-house, and also sourced a range of castings from local suppliers. Although many of these castings were standard and used in final assembly in-house, the use of in-house and external sources increased complexity and costs. Analysis of two Chinese castings suppliers used by its sister plants had revealed that they could obtain 20% cost savings. Its sister plants were also sourcing a number of similar castings, which would enable further cost savings to be obtained through volume buying. Therefore, the company outsourced its casting portfolio to one of these Chinese suppliers. Part of this strategy involved reducing the number of castings used in its product portfolio, and working with sister plants to identify common castings. A logistics services company was employed to manage the distribution link between the plant and the Chinese supplier. This involved the logistics company maintaining a local warehouse with 8 weeks of inventory, and the company paying on use. The company adopted a short-term contractual arrangement with the Chinese supplier, and in the event of difficulties could easily switch to other suppliers that were being used by its sister plants.

A further outsourcing decision involved the manufacture and assembly of chassis for its forklift product portfolio. Labor costs were a significant element of the overall process costs, which made it a potential candidate for outsourcing. Initial evaluation of a number of potential suppliers in Eastern Europe had revealed that several suppliers could offer 30% labor cost savings. However, further in-depth analysis of these suppliers had revealed that only two of the suppliers had the experience and the specialist machining and casting skills to carry out both the manufacture and assembly process at the required volume. Consequently, management in the plant embarked upon an outsourcing strategy, which involved re-designing the manufacturing and assembly process, and selecting a supplier in the Czech Republic. This strategy involved removing a number of manufacturing processes that required specialist machining and casting capabilities. The principal objective was to increase the number of suppliers capable of carrying out the manufacturing and assembly process, which would then reduce the level of risk in the event of supplier failure. As well as reducing the level of supplier risk, this would enable the company to reduce manufacturing and assembly costs. This strategy involved reducing the number of specific manufactured components in the assembly process, and also reducing the number of variants of the chassis for different forklift models, to allow the chosen supplier to achieve further cost reductions.

As part of its outsourcing strategy, the plant disposed of some of the equipment previously used internally with the manufacturing and assembly process, and invested in new equipment that would be transferred to the supplier. There were a number of reasons for this decision, including the fact that much of this equipment had come to the end of its life cycle. Crucially, the plant established a supplier agreement with the offshore supplier, to facilitate the transfer of equipment to another supplier or back internally in the event of supplier failure. The re-design process prior to outsourcing placed particular emphasis on documenting its requirements more clearly, which would smooth the transfer of equipment and knowledge associated with the process to the supplier. A comment from a manager illustrates the supply management approach: '*. . .this would help us to make a structured exit, I mean we had that type of relationship that they were never going to let production suffer no matter what happened. . .*'. Although the initial supplier agreement included a 1-year contract re-negotiated annually, the plant was considering giving additional business and committing to a longer contract if the supplier met both cost and performance targets.

3.3. Case three

This case study focuses on a privatized utility company. As part of the privatization programme, the company was compelled by the industry regulator to reduce its operating costs by 2% per annum over a 5-year period. Post privatization, the company conducted a major re-engineering exercise, which involved redesigning business processes, and reducing staff levels by almost 40% through voluntary severance schemes. Outsourcing was a central element of the strategy for reducing costs and improving performance. The initial phase of the outsourcing strategy focused on peripheral activities—areas the company termed as 'quick hits'. The company regarded the outsourcing of these activities as straightforward, as evidenced by a comment from a manager involved: '*. . .these activities were relatively easy to put out to contract with established suppliers operating in the local market. . .*'. One group of activities included building maintenance, cleaning and security. Prior to outsourcing these activities, the company undertook a number of process analysis initiatives, to determine the tasks associated with each activity, and links with other parts of the business. This involved defining clear performance measures for each activity, something which the company had not done in the past. The company employed a facilities management service provider for these activities. The selection of the service provider was based on competitive bidding, with clear requirements and performance specifications set out. In the selection process, price was the dominant selection criterion, followed by experience and service quality. Existing internal staff were given the option of either voluntary redundancy, or being transferred to the chosen

service provider. The company encouraged staff to transfer to the service provider, as their existing skills and knowledge would ensure the smooth transfer of assets and continuity of service in the areas outsourced. Throughout the contract with the service provider, the company benchmarked price and service quality levels against those of comparable alternative service providers.

Following the outsourcing of the 'quick hits', the company was forced to outsource more critical activities. This was primarily driven by a reduction in permitted capital and operational expenditure, customers demanding greater reliability, stringent service delivery targets, and pressures to reduce unit price and focus on its core energy business. Senior management in the company believed it would not meet these challenges without outsourcing more critical activities. One such portfolio of services was 'Billing/Revenue', which included information technology development, meter reading, bill production, customer query handling, accounts receipting and debt recovery. The company believed that external service providers would deliver these services at a lower cost, whilst maintaining comparable service levels with those being achieved internally. However, in-depth analysis of the capabilities of a number of service providers revealed that there was only one service provider in a position to deliver the full range of services required. Due to idiosyncrasies between processes associated with these services, it would have to embark upon a re-engineering exercise prior to outsourcing to this service provider. Also, the company feared that there would be considerable internal employee and union resistance to outsourcing the entire portfolio of services. At this stage, the company considered retaining these services internally. However, under the current arrangement, management in the company believed the internal changes required to improve performance would involve protracted negotiations with unions, changes to staff terms and conditions, and structural change. The company did not wish to commit additional financial and management resource to this area. Therefore, the company chose a spin-off arrangement.

The spin-off company would offer a number of services, including information technology application development, call center management, meter reading and billing, logistics management, training and customer account management. As well as receiving business from the company, the spin-off company would service other customers to further grow its business. Through further developing its business, it was anticipated that the spin-off company would realize greater cost reductions, through apportioning its fixed costs over a large number of customers. The information technology element of the spin-off company was regarded as key to the success of the venture, as evidenced from the comment of a senior manager: '*...primarily IT, that was one of the things we realized once we got into the process, the IT bit of it was going to be the bit, if we were going to make it successful it was going to be the key one...*'. The outsourcing relationship between the utility company and the spin-off business was regarded as collaborative, due to the presence of equity ties, and the high level of dependency between each party.

4. The measures

This section provides a description and justification for the development of the measures.

4.1. Contribution to competitive advantage

Resource-based theorists argue that organizations will attain competitive advantage by building superior performance positions in activities that are valued by customers (Barney, 1991; Peteraf, 1993). Therefore, organizations should perform internally, and build capabilities in areas that deliver competitive advantage. As the findings from the organizations studied have shown, focusing on areas that created competitive advantage was a key influence on outsourcing. *Case 1* had been building capabilities in areas of design, where it believed it would achieve higher levels of performance than competitors. In *Case 2*, many manufacturing processes were not regarded as a source of competitive advantage, and could be performed at a lower cost by suppliers. Pressures from the industry regulator to reduce costs and enhance service levels led *Case 3* to outsource and focus on its core energy business. Although existing criteria such as value and rarity employed in the RBV are relevant, each of these criteria alone is not sufficient for linking the outsourcing decision with competitive advantage. For example, Barney (1991) argues that a resource is valuable if it allows the company to exploit the opportunities or nullify the threats in the external environment. The rarity criterion associated with the RBV is another important influence on competitive advantage. However, the value and rarity criteria alone do not fully encompass the implications of outsourcing for competitive advantage. As the outsourcing decisions in the organizations have shown, a measure that encompasses both these criteria is required. For example, *Case 1* focused on the area of ASICs design because it allowed it to differentiate its products in the marketplace, and few competitors possessed such a capability.

The measure of *contribution to competitive advantage* is introduced to integrate this logic into the prescriptive outsourcing framework. For purposes of outsourcing evaluation, activities are either *critical to competitive advantage* or *not critical to competitive advantage*. Activities that are *critical to competitive advantage* have a major impact upon the ability of a company to achieve competitive advantage, either through the ability to achieve a lower cost position and/or create higher levels of differentiation than competitors. Adhering to the logic of the RBV, building a superior performance position that is difficult to replicate in such an activity, will lead to sustainable competitive advantage. *Case 1 ASICs* provides an illustration of this logic. The company believed that by developing its existing capabilities in this activity, it would develop a superior performance capability that competitors would find difficult to replicate. Alternatively, activities that are *not critical to competitive advantage* have a limited impact upon the ability of a company to achieve competitive advantage. Although these activities have to be performed well, and are necessary for serving the needs of customers, any performance improvements achieved in

such activities are unlikely to be a source of competitive advantage as they are not key differentiators in the eyes of customers. The logic of the RBV is that such activities are of limited value, readily accessible in the supply market and easy for competitors or suppliers to imitate. There were a number of examples of this logic from the organizations studied, including *Case 1 Castings* and *Case 3 FM*. Capabilities in these activities were readily accessible in the supply market, and provided no basis for competitive differentiation if performed internally by *Case 1* and *Case 3*.

Activities that are *not critical to competitive advantage* include activities that have either a marginal or insignificant impact upon competitive advantage. Resource-based theorists argue that organizations should focus scarce resource on activities that are valuable, rare and difficult to imitate. Although activities that have a marginal or insignificant impact upon competitive advantage are necessary for serving the needs of customers, they are not a means through which competitive advantage is created, and therefore are potential candidates for outsourcing. In addition, there are risks in focusing scarce resource on such activities, as this will divert resource from areas which are *critical to competitive advantage*, and where a company can build superior performance positions that are difficult to replicate. Activities that are *critical to competitive advantage* are limited in number and require considerable resource and management attention to maintain and develop strong performance positions. The actions of the organizations studied support this logic. A common influence on the distinction between activities performed internally and those outsourced, was the presence of resource constraints, and the need to focus on areas that created competitive advantage. This distinction is also supported by the use of the core and non-core language in the organizations studied. In *Case 2*, many manufacturing processes had become non-core, whilst in *Case 3* pressures from stakeholders had forced the utility company to focus on its core energy business. Table 1 summarizes how the key variables associated with the *contribution to competitive advantage* measure were present in the outsourcing decisions studied.

4.2. Relative capability position

A central premise of the RBV involves understanding why one firm differs in performance from another. Some firms gain advantage over others because they conduct certain activities in a superior manner relative to their competitors. Superior performance in the activity is considered sustainable where it is difficult for competitors to replicate. Determining organizational performance in activities relative to competitors was a key concern for all the organizations studied in the outsourcing decision. In *Case 1*, even though logistics was regarded as critical to competitive advantage, the company recognized that logistics service providers could provide higher levels of service at a lower cost. Internally, *Case 2* could not compete with offshore suppliers on cost for a range of manufacturing processes. In *Case 3*, outsourcing was part of a strategy of reducing costs in response to pressures from the industry regulator, to demonstrate that it was achieving

Table 1
The outsourcing decisions and *contribution to competitive advantage*

	Case one		Case two		Case three	
	ASICs design	Logistics	Castings	Chassis	Facilities management	Billing/Revenue
Contribution to competitive advantage	*Value*: key driver in product functionality and a potential source of differentiation in the marketplace	*Value*: major impact on reducing costs, inventory levels, lead times and time-to-market—key sources of competitive differentiation	*Value*: standard manufacturing processes not viewed as a source of competitive differentiation if performed internally	*Value*: some complex manufacturing processes not viewed as a source of competitive differentiation	*Value*: not a source of competitive differentiation if performed internally	*Value*: not a source of competitive differentiation
	Rarity: few competitors with same level of performance capability in this design area	*Rarity*: limited number of service providers with global capabilities in this area	*Rarity*: number of suppliers available with capabilities in this area	*Rarity*: a number of suppliers with capabilities in this area	*Rarity*: a number of suppliers available to provide these services	*Rarity*: limited number of suppliers with required range of capabilities in this area
	Resource focus: focusing resource on areas that were a source of competitive differentiation, needed to retain important knowledge, potential to exploit knowledge in ASICs in other critical design areas	*Resource focus*: focusing resource on areas that were a source of competitive differentiation	*Resource focus*: corporate level focusing resource investments in design, manufacturing increasingly viewed as 'non-core'	*Resource focus*: corporate level investing resource in design and manufacturing increasingly viewed as 'non-core'	*Resource focus*: investing resource in core energy business, facilities management regarded as peripheral	*Resource focus*: investing resource in core energy business
	Therefore, ***critical to competitive advantage***	Therefore, ***critical to competitive advantage***	Therefore, *not critical to competitive advantage*	Therefore, *not critical to competitive advantage*	Therefore, *not critical to competitive advantage*	Therefore, *not critical to competitive advantage*

higher performance across the business. Although existing criteria such as organization and rarity in the resource-based literature are relevant, each of these criteria alone is insufficient for explaining the implications of performance in the outsourcing decision. Barney's (1991) test of 'organization' is important, as it is concerned with analyzing how a firm exploits its resources to perform activities better than competitors. In addition, an activity in which the organization is performing in a superior manner relative to competitors, that is rare and not owned by a large number of firms, is likely to be a source of competitive advantage. However, the organization and rarity criteria alone do not encompass the implications of performance in the outsourcing decision. A measure that integrates both these criteria into outsourcing is required.

Therefore, the measure of *relative capability position* is introduced. Determining the relative capability position in an activity involves identifying the performance disparity between the sourcing organization and competitors and suppliers. For outsourcing purposes, the sourcing organization can possess either a *distinctive capability position* or a *non-distinctive capability position* in the activity. The logic of the RBV is that organizations must perform internally activities that are valuable, rare and difficult to imitate, to gain sustainable competitive advantage. This logic is integrated into the *relative capability position* measure. Activities in which an organization has a *distinctive capability position* should be performed internally, whilst activities with a *non-distinctive capability position* are potential candidates for outsourcing. The actions of the organizations support this logic, as they distinguished clearly between areas of their operations in which they possessed superior or weaker performance positions in the outsourcing decision. For example, *Case 2* had been increasingly outsourcing manufacturing areas in which suppliers had far superior cost positions. *Non-distinctive capability position* activities include those in which an organization has a lower or par performance position. Clearly, an organization should outsource activities in which it has a weaker performance position. However, par performance activities are also potential outsourcing candidates, as they do not create competitive advantage and competitors or suppliers can achieve similar levels of performance. If all an organization can do is perform activities in the same way as competitors or suppliers, the best performance it can achieve is competitive parity (Barney, 1991). However, RB theorists argue that an organization should perform internally activities in which it has a superior performance position that is difficult to replicate.

When determining the *relative capability position*, it is important to understand both the type and source of advantage in the activity. The type of advantage can be based on attributes such as lower costs, superior quality, higher service levels, etc. Determining the source of the advantage involves understanding how superior performance is achieved, and ease of replication. Potential sources of advantage include scale economies or experience in the activity. Understanding both the type and source of advantage in the activity can assist with determining whether an organization has a *distinctive capability position*. For example, *Case 1* believed that by investing in ASICs design, it would build a type of advantage that included attributes such as greater product functionality at a lower cost. The source of this advantage would be based on a number of factors, including the integration of important internal functional knowledge, and the effective leveraging of supplier capabilities into the design process. Alternatively, this analysis can be employed to determine whether an organization has a *non-distinctive capability position*. For example, FM service providers could provide FM services to *Case 3* at a lower cost and higher service level, due to the benefits of specialization from serving a range of customers. In addition, understanding the source of advantage is a reliable indicator of whether it is possible for the sourcing organization to replicate and outperform the superior performance position possessed by a supplier or competitor. Table 2 summarizes how the key variables associated with the *relative capability position* measure were present in the outsourcing decisions studied.

4.3. Opportunism associated with outsourcing

Consideration should be given to the transaction costs associated with dealing with an external supplier when outsourcing an activity. There are a number of variables that influence transactions costs. The presence of investments in physical or human assets dedicated to a particular relationship will create switching costs for the sourcing organization. This problem is further exacerbated if there are a small number of capable suppliers in the supply market (Williamson, 1985). Uncertainty both in the business environment and in the requirements of the sourcing organization may mean that it is not possible to write complete contracts. Therefore, renegotiation and frequent amendments are required as circumstances change. Complex interdependencies between business processes can also increase transaction costs (Van der Vegt et al., 1998). Indeed, a number of these variables were present in the organizations studied. *Case 3* decided against outsourcing Billing/Revenue to an external service provider due to the small number of suppliers available and the presence of idiosyncrasies between the processes involved. *Case 2* had standardized many component manufacturing processes to reduce costs and establish short-term contractual relationships with offshore suppliers.

The measure of *opportunism associated with outsourcing* is introduced to integrate this logic into the prescriptive outsourcing framework. Williamson (1985) has argued that opportunism is a central concept in the study of transaction costs. Although asset specificity is acknowledged in the literature as the most important influence on the outsourcing decision (Rindfleisch and Heide, 1997; Clark et al., 1996; Shelanski and Klein, 1995), the *opportunism associated with outsourcing* measure encompasses a number of TCE variables including asset specificity, small number of suppliers, uncertainty and information impactedness. These TCE variables were present in the behavior of the organizations studied. A number of the organizations studied employed safeguards to limit the potential for opportunism associated with

Table 2
The outsourcing decisions and *relative capability position*

	Case one		Case two		Case three	
	ASICs design	Logistics	Castings	Chassis	Facilities management	Billing/Revenue
Relative capability position	*Type of advantage*: marginally more capable in terms of cost and functionality than competitors *Source of advantage*: based on the integration of internal functional knowledge, and the effective leveraging of supplier capabilities into the design process *Potential to replicate*: potential to build a difficult-to-replicate capability through leveraging internal knowledge, supplier capabilities and committing additional resource Therefore, ***distinctive capability position***	*Type of advantage*: logistics service providers offered higher service levels at a lower cost on a global basis *Source of advantage*: scale economies, greater investments in technology achieved by the logistics service provider through serving global customers *Potential to replicate*: difficult-to-replicate logistics service provider capabilities, capability advantage likely to increase as more companies outsource logistics services Therefore, *non-distinctive capability position*	*Type of advantage*: Chinese suppliers could offer 20% cost savings in comparison with internal sources *Source of advantage*: suppliers had lower labor costs and scale economies through serving other customers *Potential to replicate*: not possible to replicate internally due to labor cost differentials and scale economies Therefore, *non-distinctive capability position*	*Type of advantage*: lower cost offshore suppliers due to labor rates *Source of advantage*: suppliers had a locational advantage in labor rates *Potential to replicate*: difficult to replicate lower cost position of offshore suppliers Therefore, *non-distinctive capability position*	*Type of advantage*: suppliers possessed lower costs and higher service levels *Source of advantage*: scale economies and experience through serving a range of customers *Potential to replicate*: difficult to replicate supplier capabilities Therefore, *non-distinctive capability position*	*Type of advantage*: initial view was that a number of capable suppliers were available with lower costs and higher service levels *Source of advantage*: analysis revealed one service provider with a greater range of capabilities *Potential to replicate*: difficult to replicate and advance upon capabilities of suppliers whilst billing/revenue remained internally Therefore, *non-distinctive capability position*

outsourcing—both *a priori* and *post hoc*. The behavior of *Case 2* in their approach to outsourcing chassis provides an illustration. Prior to outsourcing, the company redesigned the process to reduce the level of asset specificity in its requirements, and also increase the number of suppliers available. It established a supplier agreement that would enable it to switch to another supplier in the event of difficulties with the supplier during the relationship.

For outsourcing purposes, it is either *possible* or *not possible* to manage the opportunism associated with outsourcing. It is possible for the sourcing organization to manage the potential for opportunism in the transaction by adopting an appropriate relationship strategy that incorporates the appropriate safeguards to reduce the threat of opportunism (Williamson, 1975). For example, this was evident in *Case 2* and *Case 3* when they adopted primarily contractual relationships for standard activities, including castings and facilities management. As the potential for opportunism increases, the contractual safeguards incorporated will lead to more complex relationships. In the case of an outsourcing contract with high levels of asset-specific investments, the sourcing organization and the supplier can develop a collaborative relationship. However, in some cases it may not be possible to manage the opportunism associated with outsourcing, and the sourcing organization will have to retain the activity internally. Table 3 summarizes how the key variables associated with the *opportunism associated with outsourcing* measure were present in the outsourcing decisions studied.

5. A framework for outsourcing evaluation

The three measures of *contribution to competitive advantage*, *relative capability position* and the *opportunism associated with outsourcing* are integrated into a prescriptive framework for outsourcing evaluation as illustrated in Fig. 1. A central premise of the prescriptive framework is that outsourcing evaluation should be linked with corporate strategy. Therefore, the measures of *contribution to competitive advantage* and *relative capability position* are considered as the starting point for evaluation, followed by consideration of the *opportunism associated with outsourcing* measure. This is supported by the case organizations, where the drive towards outsourcing came from corporate strategy, as each organization reacted to pressures in the business environment. Pressures to reduce costs and enhance service levels meant each organization had to focus scarce resources on areas that were critical to competitive advantage and in which they had a superior performance position. Although the measures are presented in the sequence outlined in Fig. 1, it is possible to employ the framework by beginning the analysis with any of the measures. For example, when applying the framework, an organization may only consider the *opportunism associated with outsourcing* measure in the case of activities deemed as potential outsourcing candidates. However, the logic of the outsourcing framework is that each measure should be considered, as well as the relationship between each.

The framework in Fig. 1 includes the paths of the outsourcing decisions studied in the organizations, as well

Table 3
The outsourcing decisions and *opportunism associated with outsourcing*

	Case one		Case two		Case three	
	ASICs design	Logistics	Castings	Chassis	Facilities management	Billing/Revenue
Opportunism associated with outsourcing	Opportunism not considered by the company	*Asset specificity*: high physical asset specificity indicated by changes required to internal systems in the SBU at local level *Number of suppliers*: limited number of service providers with required global capabilities *Uncertainty*: moderate, indicated by difficulties in fully specifying requirements and future contingencies *Relationship arrangement*: strategic alliance developed at corporate level with the service provider	*Asset specificity*: standard requirements, low human and physical asset specificity *Number of suppliers*: high number of capable suppliers *Uncertainty*: stable and easily specified requirements *Relationship arrangement*: adopted a 1-year contract, re-negotiated annually	*Asset specificity*: re-designed process to reduce asset specificity, moderate human and physical asset specificity *Number of suppliers*: limited number of suppliers *Uncertainty*: relatively stable requirements *Relationship arrangement*: initially, annually re-negotiated contract with possibility of longer contract in the future	*Asset specificity*: standard requirements, low human and physical asset specificity *Number of suppliers*: high number of suppliers *Uncertainty*: stable and easily specified requirements *Relationship arrangement*: contractual arrangement with focus on price and service quality levels	*Asset specificity*: high human and physical asset specificity, due to process idiosyncrasies *Number of suppliers*: only one capable supplier available *Uncertainty*: difficult to fully specify requirements and future contingencies *Relationship arrangement*: major re-engineering exercise required if outsourced. Therefore, the spin-off option was chosen. Equity ties would limit opportunism potential, and achieve the benefits of specialization by serving other customers

as paths developed from the extant literature. The paths are an important means of validating the outsourcing framework. However, it must be stressed that the paths from the outsourcing decisions studied do not represent the sequence in which the decisions were made in each organization. The paths are included to illustrate both the presence of and interrelationship between the measures in the outsourcing decisions. As well as illustrating the relationship between the measures, the inclusion of the paths is important for emphasizing the continuous nature of the variables that influence the decision-making process. Although the three insourcing options in the framework – *Perform Internally and Develop*, *Invest to Perform Internally* and the *Spin-off* option (which may also be chosen as a result of opportunism variables) – are discrete decision-making choices, the interaction between the RBV and TCE variables illustrates the continuous nature of the variables in the framework, where outsourcing is considered as a potential option. *Case 3 Billing and Revenue* provides an illustration. Senior management in *Case 3* initially believed that the most suitable option was outsourcing *Billing and Revenue* to an independent service provider. This was based upon a perceived lack of strong performance in this area and the need to focus on its core energy business. However, analysis of the supply market and one service provider in particular, highlighted both the risks of outsourcing and the potential to develop this area of the business by spinning it off.

Although the framework may appear sequential in nature, including paths on the decision tree in Fig. 1 illustrates the iterative nature of the outsourcing decision-making process. For example, where outsourcing is a potential option based upon the activity being *critical to competitive advantage* and the organization having a *non-distinctive performance capability position*, the high level of opportunism in the supply market may mean outsourcing is not possible, and this may lead to the *Invest to Perform Internally* option being chosen. The iterative nature of the outsourcing decision-making process is also indicated by the reverse arrow at the bottom of Fig. 1. The logic of the prescriptive outsourcing framework is now presented. Firstly, the sourcing options based upon the relationship between the *contribution to competitive advantage* and *relative capability position* measures is considered, followed by the *opportunism associated with outsourcing* measure, where outsourcing is a potential sourcing option.

5.1. Critical to competitive advantage and a distinctive capability position

In this instance, there are a number of potential sourcing strategies:

- *Perform Internally and Develop*. This involves performing the activity internally and further developing future capability. *Case 1* ASICs design provides an illustration of this sourcing strategy, as shown in Fig. 1. The company believed that this area was *critical to competitive advantage*, and analysis of competitors and suppliers revealed that it possessed a distinctive capability position. Keeping such an activity internal is most

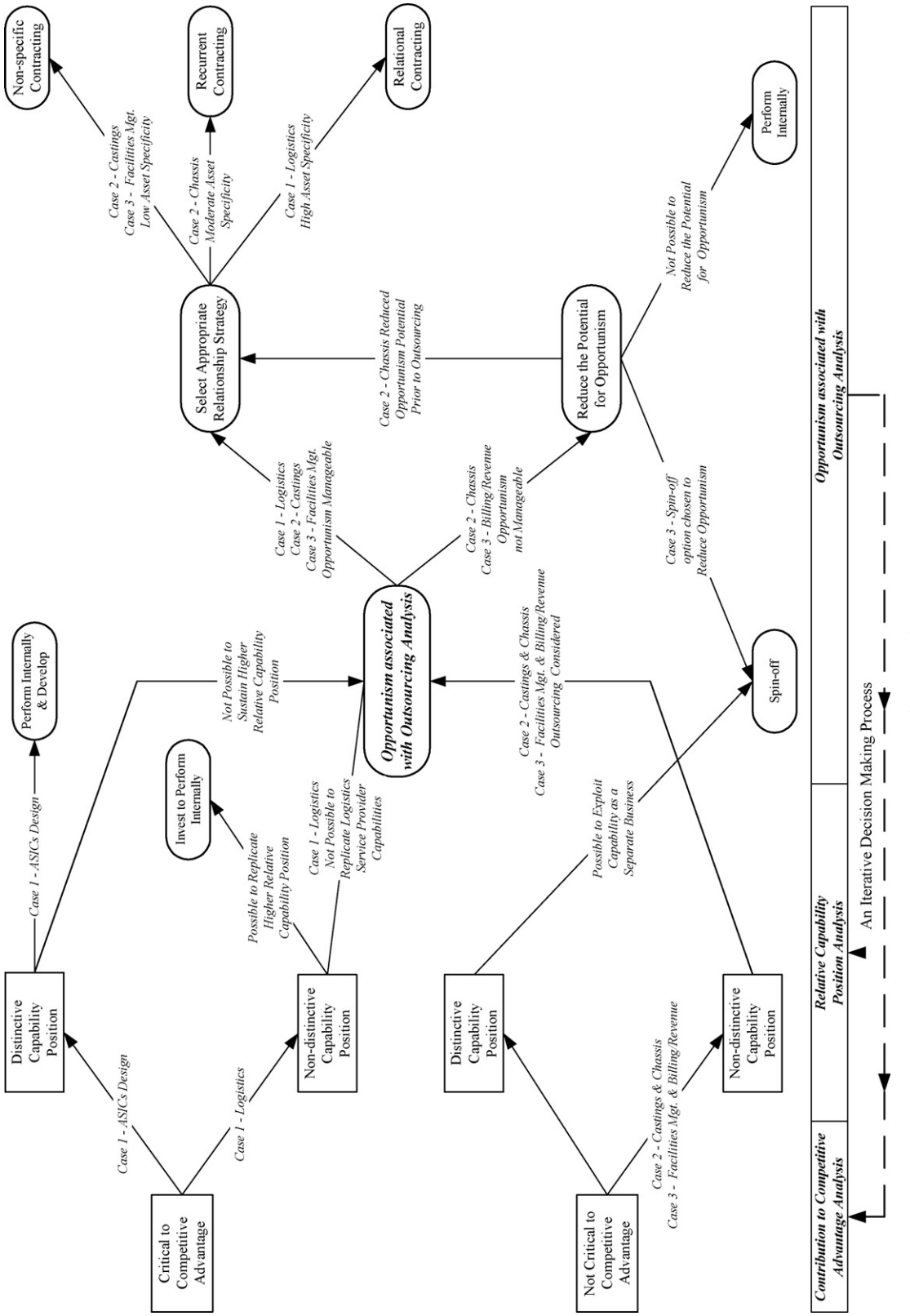

Fig. 1. A prescriptive framework for outsourcing evaluation.

appropriate when an organization is in a strong position to build and sustain a performance advantage over time. Indeed, *Case 1* believed that investing in this area would allow the company to build and sustain a strong performance position. A number of RBV variables can inform the analysis on the sustainability of an advantage. For example, causal ambiguity is a major influence on the sustainability of such a position (Reed and DeFillippi, 1990). Such a capability may be difficult to copy because other organizations cannot understand the relationship between the resources and capabilities controlled by the company possessing the capability. If an advantage is based on capabilities that display causally ambiguous characteristics, then it will be difficult for competitors to replicate such an advantage.

- *Outsource*. Ideally, an organization would wish to have superior performance in as many critical activities as possible. However, it is only possible to possess superior performance positions in a limited number of activities, due to the resources required to maintain such a position. In certain instances, any superior performance position currently held by an organization is not sustainable and can be quickly replicated. For example, many advantages attained from innovations in computer hardware are typically short-lived, since competitors can rapidly replicate or advance upon any such innovations (Mata et al., 1995). Also, it may be more prudent to focus on other activities in which the organization possesses a stronger performance position, and which are more critical to competitive advantage in the future. Where outsourcing is considered as a potential sourcing strategy, the *opportunism associated with outsourcing* measure should be considered.

5.2. Critical to competitive advantage and a non-distinctive capability position

In this instance, there are a number of potential sourcing strategies:

- *Outsource*. This is a potential strategy where it is both difficult and costly to replicate a superior performance position held by a competitor or supplier. *Case 1* Logistics provides an illustration of this sourcing strategy as shown in Fig. 1. The area of logistics had a considerable impact upon the ability of the company to reduce costs and lead times, and was regarded as *critical to competitive advantage*. However, a number of external service providers were identified that could provide a higher level of service at a lower cost globally. *Case 1* could not replicate these capabilities, as these service providers were exploiting volume discounts through serving the needs of a number of customers. Although the superior capabilities of service providers was a major influence on the outsourcing of *Case 1* Logistics, the importance of the activity in the future may be another influence on the choice of this sourcing strategy. For example, changes in the business environment, such as new technology or changes in customers' preferences, may render the activity less valuable in the future (Barney, 1995). This is similar to the concept of dysfunctional resources. Resources that have created value in the past can become dysfunctional, i.e. they prevent change and lead to a lack of innovation capability. These resources are sometimes referred to as 'core rigidities' (Leonard-Barton, 1992). Where outsourcing is considered as a potential option, the *opportunism associated with outsourcing* measure should be considered.
- *Invest to Perform Internally*. This option involves investing the necessary resources to bridge the performance disparity between the sourcing organization and competitors. The selection of this option will be influenced by the significance of the disparity in performance and barriers to imitation. Where the disparity is not significant, there is the potential to invest resources to perform the activity internally. Adhering to the logic of the RBV, the sourcing organization should ensure that it is in a position to replicate and advance upon a superior performance position held by one or more of its competitors. For example, this option may be desirable in a case where the technologies involved in the activity are in the early stages of development and therefore may offer the potential for future growth. However, where the capabilities of the organization lag considerably behind the capabilities of competitors, it may be difficult to justify a substantial investment of resources to match or advance upon external capabilities.

5.3. Not critical to competitive advantage and a distinctive capability position

In this case, the sourcing organization is more competent than competitors or suppliers in an activity that is not critical to competitive advantage. Although the sourcing organization is more competent than competitors, the activity is not central to competitive advantage. Therefore, adhering to the logic of the RBV, the organization should consider externalizing such an activity, and focus resources on building capabilities in activities that are more critical to organizational success. A potential strategy option involves exploiting the capability in this area, by creating a spin-off business, which specializes in this area of operation. For example, in the automotive industry, advances in engineering and production technologies have allowed manufacturers to exploit supply chain capabilities, through spinning off parts of their operations into newly formed independent suppliers (Fine, 1998). The success of a spin-off business will depend upon the ability to attract a significant percentage of sales from third-party customers, rather than sales primarily from the founding customer. However, where there is a lack of potential to develop this area as a separate business, the sourcing organization may have to consider outsourcing as an option. In this instance, the *opportunism associated with outsourcing* measure should be considered.

5.4. Not critical to competitive advantage and a non-distinctive capability position

In this case, there are competitors or suppliers that are more capable than the sourcing organization for an activity not critical to competitive advantage. Adhering to the logic

of the RBV, such activities should be outsourced. The actions of *Case 2* and *Case 3* in a number of outsourcing decisions provide illustrations of this sourcing strategy. *Case 2* had been increasingly outsourcing manufacturing processes to more capable suppliers, and *Case 3* had outsourced facilities management into a well-developed supply market. Where outsourcing is regarded as the most appropriate strategy, the *opportunism associated with outsourcing* measure should be considered.

5.5. Opportunism associated with outsourcing

Where outsourcing is a potential option, an assessment of the *opportunism associated with outsourcing* should be undertaken. Based upon an analysis of opportunism, the sourcing organization will be faced with a number of scenarios.

5.5.1. Opportunism associated with outsourcing manageable via selecting an appropriate relationship strategy

In this scenario the level of opportunism associated with outsourcing is manageable through selecting the appropriate relationship strategy below:

- *Non-specific Contracting*. It is possible to source the activity from a number of suppliers in the supply market in this situation. The supply market is extremely competitive, with a high level of rivalry between many suppliers aggressively competing for business from buyers who share similar sourcing requirements. This relationship strategy is the classical market contract governance structure in TCE, which includes relatively short-term, bargaining relationships between independent buyers and suppliers. *Case 2* and *Case 3* employed this relationship strategy in the outsourcing of Castings and Facilities Management.
- *Recurrent Contracting* involves repeated exchanges of assets with moderate levels of asset specificity (Williamson, 1985). The low potential for opportunism in the supply market is indicated by the presence of a number of capable suppliers in the supply market. Neo-classical contracts are employed in which all future contingencies are specified, and the impacts of unforeseeable events are limited by incorporating provisions for third-party arbitration to resolve disputes. The duration of contracts is relatively short-term. The parties are viewed as autonomous, but contemplating a more embedded relationship (Ring and van de Ven, 1992). After redesigning the chassis assembly, *Case 2* adopted a relationship strategy comparable with recurrent contracting. Although the initial supplier agreement included a 1-year contract re-negotiated annually, the plant was considering giving additional business and committing to a longer contract, if the supplier met both cost and performance targets.
- *Relational Contracting*. In this case, there is high potential for opportunism, indicated by the small number of suppliers and the inability to fully specify or control all elements of the exchange prior to their execution. This relationship involves the adoption of a longer-term collaborative buyer–supplier relationship. Adopting this approach allows the sourcing organization to establish and build a mutually advantageous relationship with the supplier (Bensaou, 1999; Dyer, 1996; Bensaou and Venkatraman, 1995). *Case 1* Logistics provides an illustration of this relationship strategy. The company at corporate level had established a strategic alliance with this logistics service provider for the supply of logistics services to all its sites globally. Furthermore, the SBU studied had to make relationship-specific investments in a number of areas, including integrated order management and delivery systems, and inter-organizational information systems, which had created a high level of asset specificity.

5.5.2. Reduce the potential for opportunism

In this scenario the opportunism associated with outsourcing is not manageable via selecting an appropriate relationship strategy. Therefore, the sourcing organization should pursue a strategy of reducing the potential for opportunism. In some instances, there may be factors in the transaction, such as a high degree of uncertainty and a small number of suppliers, which make it extremely difficult for the sourcing organization to manage opportunism. Adhering to the logic of TCE, an organization should adopt a strategy, which reduces transaction costs and the potential for opportunism (Williamson, 1979). *Case 2* reduced the potential for opportunism by redesigning the chassis process prior to outsourcing to reduce the level of asset specificity. This strategy allowed *Case 2* to adopt a recurrent contracting arrangement, as shown in Fig. 1. *Case 3* provides another illustration of a strategy for reducing opportunism when it chose the spin-off sourcing option. The company considered the level of opportunism as too high, due to the presence of only one capable service provider. In addition, although the company had a lower relative capability position, it believed that there was the potential to develop a stronger capability in this area. The spin-off arrangement offered the company the option of avoiding the potential for opportunism associated with outsourcing, whilst allowing the further development of a capability.

5.5.3. Not possible to reduce opportunism potential

In some circumstances it may not be possible to reduce the potential for opportunism associated with outsourcing. In this case, the sourcing organization will have to perform the activity internally as shown in Fig. 1.

6. Theoretical implications

The findings from the research have important theoretical implications. The findings have shown that both TCE and the RBV are required to understand the complexities of the outsourcing decision. TCE and RBV variables were present in many of the outsourcing decisions studied, and yielded complementary prescriptions. In relation to *Case 2*, the variables associated with TCE and the RBV were present in the company's approach to outsourcing. Many manufacturing processes had become non-core, particularly in cases where it could be demonstrated that suppliers might undertake the processes at a lower cost.

Therefore, variables associated with the RBV, including resource constraints and suppliers developing specialist capabilities, were important influences on outsourcing for this company. However, the company pursued a strategy of reducing the level of asset specificity with the supplier prior to outsourcing chassis. This case also illustrates the risks for a company outsourcing activities defined as 'non-core', without understanding opportunism influences. Many organizations often employ the distinction between core and non-core as the primary basis for outsourcing without understanding conditions in the supply market (Bryce and Usseem, 1998). However, *Case 2* illustrates the importance of integrating TCE variables into outsourcing decisions, which involve activities deemed non-core.

Case 3 also presents an illustration of how the variables associated with TCE and the RBV were present in the decision-making process for the spin-off configuration. Initially, senior management in the utility company considered outsourcing as the most appropriate sourcing strategy. However, analysis of potential service providers revealed that there was only one capable service provider. There were idiosyncrasies in processes between the utility company, and this area of the business that increased the potential for opportunism from outsourcing to an external service provider. Spinning off this part of the operation into a separate business with equity ties to the utility company, limited the potential for opportunism in the relationship. The presence of high asset specificity served as a catalyst for pursuing a relational governance structure with equity ties, rather than pursuing a straightforward contractual outsourcing arrangement. This configuration also exhibited characteristics associated with the RBV in particular, the externalization of a potentially valuable internal capability. Decoupling this area of the utility company into a spin-off business would allow it to compete in external service markets and achieve the benefits of specialization through servicing other customers. Indeed, references to the spin-off arrangement in the literature often infer that this option is chosen solely to exploit a strong internal capability (Fine, 1998). However, the findings here have shown that TCE influences such as a small number of suppliers in the supply market can be an important influence as well.

Although the findings support the view that both theoretical perspective are required to fully explain the outsourcing decision (Ellram et al., 2008; Vivek et al., 2008; Holcomb and Hitt, 2007; Jacobides and Winter, 2005; Madhok, 2002; Combs and Ketchen, 1999; Poppo and Zenger, 1998), the research has highlighted that both theories should be applied with caution. In particular, the contradictory nature of each theory is an important consideration. For example, in *Case 1* the company retained the design process internally to develop its capability, even though there were a number of potential suppliers available. The company's approach to the outsourcing process was influenced by the logic of the RBV. Although the company was aware of supplier capabilities, opportunism variables played no part in the decision to keep this design process internal. The decision to keep this design process internal was driven by the need to further invest in and develop an area that was critical to competitive advantage. This is an important area for further research in enhancing our understanding of how organizations make outsourcing decisions, because in some instances the prescription of each theory may be contradictory. Further research is required to examine the complementary and contradictory prescriptions of TCE and the RBV in outsourcing decision-making contexts. In TCE, the prescription in relation to the outsourcing decision is influenced primarily by the potential for opportunism in the exchange. In the RBV, the prescription in relation to outsourcing is influenced by the capability of an organization to develop a sustainable advantage in the resource. Considering the lower and upper limits of each theory – potential for opportunism (TCE) and resource position (RBV) – allows us to offer a number of propositions in which each theory is likely to yield either contradictory or complementary prescriptions in outsourcing decisions. Therefore, the following propositions are offered:

P1. *An activity in which an organization has a superior resource position and where there is low potential for opportunism*:

P1a. *Adhering to the logic of the RBV, the greater the likelihood the activity will be performed internally.*

P1b. *Adhering to the logic of TCE, the greater the likelihood the activity will be outsourced.*

P2. *An activity in which an organization has a weaker resource position and where there is high potential for opportunism*:

P2a. *Adhering to the logic of the RBV, the greater the likelihood the activity will be outsourced.*

P2b. *Adhering to the logic of TCE, the greater the likelihood the activity will be performed internally.*

P3. *Adhering to the logic of the RBV and TCE, where an organization has a superior resource position and there is high potential for opportunism, the greater the likelihood the activity will be performed internally.*

P4. *Adhering to the logic of the RBV and TCE, where an organization has a weaker resource position and there is low potential for opportunism, the greater the likelihood the activity will be outsourced.*

Further research is required in a wider number of research settings to examine the outcomes of outsourcing decisions that exhibit similar characteristics to each of the potential scenarios outlined in Fig. 2. Longitudinal research assessing the success of each alternative might indicate in which context the variables associated with either theoretical perspective – alone or in combination – predict a more successful outsourcing decision.

The findings have identified a limitation of analyzing outsourcing decision-making from the perspectives of the RBV and TCE. Each of these theories is based largely on economic rationale, and pays little attention to the political context of an organization in the outsourcing decision.

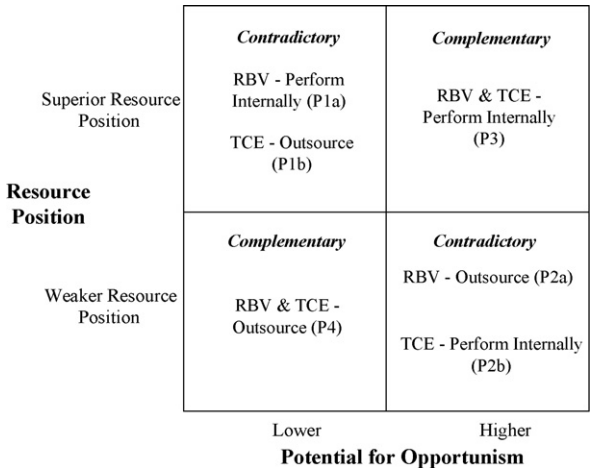

Fig. 2. Complementary and contradictory prescriptions of the RBV and TCE in outsourcing decisions.

Organizational politics involves the strategies that individuals employ to obtain and use power to influence organizational goals to further their own interests and ambitions (McIvor, 2005). This contrasts significantly with the rational model of management decision-making, in which it is assumed that managers will agree on the strategic objectives of the organization and the strategies that should be pursued to lead to their achievement. Political considerations played a role in some of the outsourcing processes studied. Political considerations influenced the spin-off sourcing configuration chosen by the utility company. A key reason for selecting the spin-off configuration was that it was less likely to lead to employee resistance than if employees were transferred to an independent service provider. This is an area of outsourcing research that requires further examination. In particular, it would be valuable to carry out in-depth case study analysis to understand more fully the influence of political behavior on the RBV and TCE perspectives in outsourcing decision-making.

7. Concluding remarks

The research presented in this paper has important implications for theory and practice in operations management. The prescriptive outsourcing framework provides a useful basis for practical prescription, and encompasses a number of variables that capture the complexities of outsourcing. The framework addresses a number of important questions in outsourcing evaluation that are at the heart of operations management: how can outsourcing be employed to achieve improvements in performance? Prior to outsourcing, how can an activity be redesigned to reduce asset specificity? Should an organization maintain and build upon a superior performance position in an activity, or outsource the activity and leverage the capabilities of suppliers? Why can an organization not achieve the performance levels attained by competitors or suppliers in the activity? What are the resource implications of investing in an activity to perform it internally? What collaborative mechanisms can be developed between the buyer and supplier to deal with uncertainty and changing requirements? How can the outsourcing relationship with the supplier be managed to jointly build difficult-to-imitate capabilities?

Performance was a central concern of the organizations in outsourcing decision-making. Each of the case organizations was under pressure to improve performance, reduce costs and develop capabilities—key competitive priorities at the heart of operations strategy. The findings have shown that the RBV is an effective theory for understanding the link between outsourcing and performance at the operations level. The RBV also provides a valuable theoretical lens for resource allocation decisions in an organization. As organizations face constraints on resource, it is crucial to understand how allocating resource through internal sourcing strategies allows an organization to improve performance and develop capabilities at the operations level. Performance considerations also extend to the management of suppliers in the case of outsourced activities. Understanding how suppliers directly impact upon competitive priorities is particularly important as organizations outsource a greater range of activities. As the findings from this research have shown, organizations expected suppliers to deliver cost reductions and improve service levels—key competitive priorities. However, there is much evidence in the literature of suppliers in outsourcing arrangements failing to meet customer expectations in terms of cost, quality and service. Further insights from an operations management perspective are required into the facilitators and inhibitors of suppliers delivering higher performance to buyers in outsourcing arrangements.

The findings have highlighted the importance of the RBV and TCE to the fields of business improvement and process re-design. The presence of idiosyncrasies in the Billing/Revenue process in *Case 3* was an impediment to outsourcing. Understanding process idiosyncrasies and internal interdependencies are important considerations when outsourcing complex processes. TCE provides a powerful theoretical framework for understanding how such idiosyncrasies and interdependencies create opportunism potential. Often, organizations outsource entire processes to a single supplier, which include both standard and highly specific elements. Combining the logic of TCE with business process re-design will enable an organization to identify standard processes where cost savings can be expected in outsourcing arrangements. Where appropriate, business process analysis can also be employed to understand processes and reduce both costs and asset specificity in outsourcing. In addition, project management is of particular relevance to outsourcing when re-designing and transferring responsibility for complex business processes to suppliers. Such outsourcing arrangements are extremely complex, particularly in an offshore context, involving strong leadership, clear objectives, adequate resource allocation, project scheduling, clear communication channels and control mechanisms.

There are a number of limitations with the research. Further research is required to explore more fully the linkage between the RBV and TCE variables in outsourcing practice. The findings have shown that these theories

should be applied with caution, due to contradictory prescriptions in some instances. Further insights are required into both the complementary and contradictory prescriptions of each theoretical perspective, and the implications for both management practice and theory development in the context of outsourcing. In considering only a limited number of case studies, there was no attempt to develop or test research hypotheses or propositions. Therefore, it is difficult to emphasize the significance of the research in relation to a wider organizational population. Also, as is often the case with case study research, when combining much data from a wide variety of sources, and over a long time period, the researchers' analysis of the findings is often a significant 'reality' filter (Gummesson, 1991). The main limitation of the outsourcing framework is that its applicability has only been assessed by one research group in a limited number of outsourcing instances. Therefore, the value of the framework will not be fully assessed until it is rigorously tested by other researchers and in other research settings.

Appendix A. Interview questions

Why did your organization consider outsourcing this area of the business?
What were you expecting to gain?
How significantly does this activity impact upon the costs and revenues of your organization?
To what extent does achieving superior performance levels in this activity enable your organization achieve a competitive advantage within your industry? Why?
At the time of the outsourcing evaluation process, how did your performance in the activity compare with that of your competitors/suppliers? Why?
To what extent was it difficult for your organization or a competitor to replicate the superior capability of any organization in this activity? Why?
How long would it take to replicate the superior performance levels of the industry leader in this activity, for example, more or less than 2 years?
To what extent did resource constraints within your organization impact upon the sourcing decision, for example, reductions in capital expenditure prevented you from improving or developing a capability in this activity internally?
Prior to considering outsourcing, to what extent was your approach to performing this activity highly customized to the needs of your organization. Why?
In order to undertake the activity, to what extent would the chosen supplier have to acquire highly specific knowledge of the operating procedures of the activity and your organization? Why?
In order to undertake the activity, to what extent would the chosen supplier have to invest in equipment that is highly specific to the needs of your organization? Why?
Prior to considering outsourcing, how many capable external suppliers were available that were in a position to provide the activity?
If the contract were to be terminated with the supplier, to what extent would there have been considerable costs incurred in switching to another supplier or bringing the activity back in-house?
To what extent could the supplier undertake standardized routines in relation to delivery of the activity?
To what extent was it possible to establish clear written rules and procedures to enable the supplier to manage and deliver the activity? Why?
To what extent was it possible to establish clear performance levels for the activity, for example, in terms of quantity, quality, and timeliness of output? Why?
To what extent was it possible to negotiate a contract that clearly specified the standards of performance required and the means of evaluation? Why?
Assess the difficulties of predicting current and future demand levels associated with the process. Why?
In the case of an outsourced activity, what was the duration of the contract with the supplier?
To what extent did the relationship with the supplier rely upon collaborative mechanisms such as joint problem solving, trust, information sharing, frequent communication?

References

Aron, R., Singh, J.V., 2005. Getting offshoring right. Harvard Business Review December, 135–143.
Barney, J.B., 1995. Looking inside the organization for competitive advantage. Academy of Management Executive 9, 49–61.
Barney, J.B., 1991. Firm resources and sustained competitive advantage. Journal of Management 17 (1), 99–120.
Bensaou, M., 1999. Portfolios of buyer–supplier relationships. Sloan Management Review 39 (4), 35–44.
Bensaou, M., Venkatraman, N., 1995. Configurations of inter-organizational relationships: a comparison between US and Japanese automakers. Management Science 41 (9), 1471–1492.
Boyer, K., Pagell, M., 2000. Measurement issues in empirical research: improving measures of operations strategy and advanced manufacturing technology. Journal of Operations Management 18, 361–374.
Bryce, D.J., Usseem, M., 1998. The impact of corporate outsourcing on company value. European Management Journal 16 (6), 635–643.
Casson, M., 1998. Information and Organization: A New Perspective on the Theory of the Firm. Oxford University Press, New York.
Clark, T., Zmud, R., McCray, G., 1996. The outsourcing of information services: transforming the nature of business in the information industry. Journal of Information Technology 10, 221–238.
Coates, T.T., McDermott, C.M., 2002. An exploratory analysis of new competencies: a resource-based perspective. Journal of Operations Management 20, 435–450.
Combs, J.G., Ketchen, D.J., 1999. Explaining inter-firm cooperation and performance: toward a reconciliation of predictions from the resource-based view and organizational economics. Strategic Management Journal 20, 867–888.
Conner, K.R., Prahalad, C.K., 1996. A resource-based theory of the firm: knowledge versus opportunism. Organization Science 7 (5), 477–501.

Conner, K.R., 1991. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm? Journal of Management 17 (1), 121–154.
Dyer, J.H., Singh, H., 1998. The relational view: cooperative strategy and sources of inter-organizational competitive advantage. Academy of Management Review 23, 660–679.
Dyer, J.H., 1996. Does governance matter? Keiretsu alliances and asset specificity as sources of Japanese competitive advantage. Organization Science 7 (6), 649–666.
Eisenhardt, K., 1989. Building theories from case study research. Academy of Management Review 14 (4), 532–550.
Ellram, L.M., Tate, W., Billington, C., 2008. Offshore outsourcing of professional services: a transaction cost economics perspective. Journal of Operations Management 26 (2), 148–163.
Fine, C., 1998. Clockspeed: Winning Industry Control in the Age of Temporary Advantage. Perseus Books, Reading, MA.
Grover, V., Malhotra, M., 2003. Transaction cost framework in operations and supply chain management research: theory and measurement. Journal of Operations Management 21, 457–473.
Gummesson, E., 1991. Qualitative Methods in Management. Sage, London.
Hamel, G., Prahalad, C.K., 1994. Competing for the Future. Harvard Business Press, Boston.
Harrigan, K.R., 1986. Matching vertical integration strategies to competitive conditions. Strategic Management Journal 7, 535–555.
Hayes, R., Pisano, G., Upton, D., Wheelwright, S., 2005. Operations, Strategy, and Technology: Pursuing the Competitive Edge. Wiley, Hoboeken, NJ.
Holcomb, T.R., Hitt, M.A., 2007. Toward a model of strategic outsourcing. Journal of Operations Management 25 (2), 464–481.
Jacobides, M.G., Winter, S.G., 2005. The co-evolution of capabilities and transaction costs: explaining the institutional structure of production. Strategic Management Journal 26, 395–413.
Jiang, B., Belohlav, J., Young, S., 2007. Outsourcing impact on manufacturing firms' value: evidence from Japan. Journal of Operations Management 25, 885–900.
Klein, B., Crawford, R., Alchian, A., 1978. Vertical integration: appropriable rents and the competitive contracting process. Journal of Law and Economics 21, 279–326.
Langlois, R.N., Robertson, P.L., 1995. Firms, Markets and Economic Change: A Dynamic Theory of Business Institutions. Routledge, London.
Leonard-Barton, B.D., 1992. Core capabilities and core rigidities: a paradox in managing new product development. Strategic Management Journal 13, 111–126.
Leong, G., Snyder, D., Ward, P., 1990. Research in the process and content of manufacturing strategy. Omega 18, 109–122.
Lowson, R.H., 2002. Operations strategy: genealogy, classification and anatomy. International Journal of Operations and Production Management 22 (10), 1112–1129.
Madhok, A., 2002. Reassessing the fundamentals and beyond: Ronald Coase, the transaction cost and resource-based theories of the firm and institutional structure of production. Strategic Management Journal 23, 535–550.
Madhok, A., 1996. The organization of economic activity: transaction costs, firm capabilities and the nature of governance. Organization Science 7 (5), 577–590.
Mata, F.J., Fuerst, W.L., Barney, J.B., 1995. Information technology and sustained competitive advantage: a resource-based analysis. MIS Quarterly 19 (4), 487–505.
McIvor, R., 2005. The Outsourcing Process: Strategies for Evaluation and Management. Cambridge University Press, Cambridge.
McNally, R.C., Griffin, A., 2004. Firm and individual choice drivers in make-or-buy decisions: a diminishing role for transaction cost economics? The Journal of Supply Chain Management 40 (1), 4–17.
Miles, M., Huberman, A., 1994. Qualitative Data Analysis: An Expanded Source Book, 2nd Edition. Sage Publications, Beverly Hills, CA.
Peteraf, M.A., 1993. The cornerstones of competitive advantage: a resource-based view. Strategic Management Journal 14, 179–191.
Poppo, L., Zenger, T., 1998. Testing alternative theories of the firm: transaction cost, knowledge-based and measurement explanations of make-or-buy decisions in information services. Strategic Management Journal 19 (9), 853–877.
Powell Mantell, S., Tatikonda, M., Liao, Y., 2006. A behavioral study of supply manager decision-making: factors influencing make versus buy evaluation. Journal of Operations Management 24, 822–838.
Quinn, J.B., 1999. Strategic outsourcing: leveraging knowledge capabilities. Sloan Management Review 40 (4), 9–21.
Reed, R., DeFillippi, R.J., 1990. Causal ambiguity, barriers to imitation, and sustainable competitive advantage. Academy of Management Review 15 (1), 88–102.
Rindfleisch, A., Heide, J.B., 1997. Transaction cost economics: past, present, and future applications. Journal of Marketing 61 (4), 30–54.
Ring, P.S., van de Ven, A.H., 1992. Structuring cooperative relationships between organizations. Strategic Management Journal 13, 483–498.
Shelanski, H., Klein, P.G., 1995. Empirical research in transaction cost economics: a review and assessment. Journal of Law, Economics, and Organization 11, 335–361.
Stake, R., 1995. The Art of Case Research. Sage Publications, Newbury Park, CA.
Stratman, J.K., 2008. Facilitating offshoring with enterprise technologies: reducing operational friction in the governance and production of services. Journal of Operations Management 26 (2), 275–287.
Van der Vegt, G., Emans, B., Van der Vliert, E., 1998. Motivating effects of task and outcome interdependence in work teams. Group and Organization Management 23 (2), 124–143.
Vastag, G., 2000. The theory of performance frontiers. Journal of Operations Management 3, 353–360.
Vivek, S., Banwet, D., Shankar, R., 2008. Analysis of interactions among core, transaction and relationship-specific investments. Journal of Operations Management 26 (2), 180–197.
Walker, G., Weber, D., 1987. Supplier competition, uncertainty and the make-or-buy decision. Academy of Management Journal 30, 589–596.
Williams, T., Maull, R., Ellis, B., 2002. Demand chain management theory: constraints and development from global aerospace supply webs. Journal of Operations Management 20, 691–706.
Williamson, O.E., 1985. The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting. Free Press, New York.
Williamson, O.E., 1981. The modern corporation: origins, evolution, attributes. Journal of Economic Literature 19, 1537–1568.
Williamson, O.E., 1975. Markets and Hierarchies. Free Press, New York.
Yin, R., 1984. Case Study Research: Design and Methods. Sage Publications.
Youngdahl, W., Ramaswamy, K., 2008. Offshoring knowledge and service work: a conceptual model and research agenda. Journal of Operations Management 26 (2), 212–221.