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# THE INFLUENCE OF CAPABILITY CONSIDERATIONS ON THE OUTSOURCING DECISION: THE CASE OF A MANUFACTURING COMPANY

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**THE INFLUENCE OF CAPABILITY CONSIDERATIONS ON THE  
OUTSOURCING DECISION: THE CASE OF A MANUFACTURING  
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3 **THE INFLUENCE OF CAPABILITY CONSIDERATIONS ON THE OUTSOURCING**  
4 **DECISION: THE CASE OF A MANUFACTURING COMPANY**  
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15 **Abstract**

16 The study of outsourcing has been influenced by a number of theories from a range of  
17 disciplines including industrial economics, business strategy, and management accounting. In  
18 particular, the resource-based theory of the firm has been increasing in prominence in  
19 outsourcing as companies pursue competence-based strategies to achieve competitive  
20 advantage. This paper assesses the utility of the resource-based theory as a theoretical lens to  
21 understand the outsourcing decision in a manufacturing context. A prescriptive outsourcing  
22 framework is presented which was developed from the resource-based theory and carrying  
23 out in-depth case study research in a manufacturing company. The findings illustrate that the  
24 framework provides a useful basis for practical prescription in a manufacturing environment.  
25 However, the research reveals a number of the limitations of the framework, including the  
26 need to consider more fully the implications of supply market conditions on outsourcing  
27 decisions.  
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38 **Keywords:**

39 Outsourcing; resource-based theory; operations strategy; and performance.  
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## THE INFLUENCE OF CAPABILITY CONSIDERATIONS ON THE OUTSOURCING DECISION: THE CASE OF A MANUFACTURING COMPANY

### Introduction

The trend towards outsourcing both locally and offshore has been increasing dramatically throughout the developed economies of the world. The drive for greater efficiencies and cost reductions has forced many organisations to increasingly specialise in a limited number of key areas. The trend towards the outsourcing of manufacturing-related activities has been particularly pronounced. In the car industry, the large Western carmakers have outsourced many of their manufacturing processes to both local and offshore suppliers (Corswant and Fredriksson, 2002). The decision on whether to manufacture in-house or employ an external supplier - the classic make-or-buy decision - has always been a fundamental issue associated with manufacturing. Organisations can benefit greatly from accessing the specialist capabilities of suppliers in a range of manufacturing areas (Hoetker, 2005). Many specialist suppliers can develop a greater depth of knowledge, invest more in systems and processes, and achieve efficiencies through economies of scale and experience (Holcomb and Hitt, 2006). However, many organisations often fail to fully assess the implications of these issues when approaching the outsourcing decision (Barthelemy, 2003). In many cases, the choice of which parts of manufacturing to outsource is based on ascertaining what will save most on overhead costs, rather than how the decision impacts the long-term capabilities of the organisation.

An influential theory on outsourcing both in theory and practice has been the resource-based theory (RBT) of the firm. The resource-based theory (RBT) of the firm has had a major influence on business strategy in the last decade by postulating that unique capabilities are central to creating competitive advantage. Proponents of the RBT argue that competitive advantage is achieved through a combination of unique resources and competencies that enable firms to secure competitive advantage in their respective markets (Barney, 1991). The RBT is important to the outsourcing decision, as superior performance achieved in organisational activities relative to competitors would explain why such activities are internalised within an organisation. Many applications of the RBT in the context of outsourcing have been at the business strategy level of the organisation (Insinga and Werle, 2000; Quinn, 1999). However, the RBT is now receiving significant attention in the operations and production management area (Mills et al., 2000; Lewis, 2003). The development and leveraging of processes to perform a range of organisational activities is central to operations and production management. Indeed, many of the resources and

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3 capabilities that are a source of competitive advantage have their basis in this function  
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5 (Coates and McDermott, 2002).  
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8 This paper assesses the utility of the resource-based theory as a theoretical lens to understand  
9 the outsourcing decision in the context of a manufacturing company. The paper presents a  
10 prescriptive outsourcing framework, which was derived from integrating variables from the  
11 RBT and undertaking in-depth case study analysis in a manufacturing organisation that had  
12 been involved in extensive outsourcing. The paper is structured as follows. A review of the  
13 RBT and its relationship with operations and production management is presented. An  
14 overview of the outsourcing decisions in the case company is presented. This is followed by  
15 an overview of the constructs and the outsourcing framework developed from the RBT, and  
16 the case study analysis undertaken in the manufacturing company. The theoretical  
17 implications are presented in the discussion section, which is followed by management  
18 implications and research limitations in the conclusion section.  
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## 28 **THE RESOURCE-BASED THEORY**

29 The RBT provides an important theory for understanding the boundary of the firm. Resource-  
30 based theorists view the firm as a unique bundle of assets and resources that if employed in  
31 distinctive ways can create competitive advantage (Barney, 1991). According to Barney  
32 (1991), a resource with the potential to create competitive advantage must meet a number of  
33 criteria including value, rarity, imitability and organisation. Resources and capabilities are  
34 considered valuable if they allow an organisation to both exploit opportunities and counter  
35 threats. The rarity criterion is related to the number of competitors that possess the same  
36 valuable resource. A valuable resource that is unique amongst both current and potential  
37 competitors is likely to be a source of competitive advantage and should be held inside the  
38 organisation. The imitability criterion is concerned with the sustainability of the competitive  
39 advantage of the valuable and rare resource, and thereby the ease with which competitors can  
40 replicate it. Finally, Barney (1991) argues that a firm must be organised to exploit its  
41 resources and capabilities. The organisation criterion includes a number of elements  
42 including the reporting structure, management control systems and compensation policies.  
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53 The influence of the RBT has been increasing in prominence in the area of production and  
54 operations management (Mills et al., 2003; Lawson, 2002). Throughout the 1980s, most of  
55 the practical research in operations strategy employed the market-based view of business  
56 strategy as the starting point largely influenced by the work of Michael Porter. Porter's  
57 (1980) generic strategies including cost leadership, differentiation, or focus have been very  
58 much influenced by the market-based view. The market-based view influenced many of the  
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early approaches proposed for operations strategy formulation and implementation. Terry Hill's (1989) early model for the implementation of operations strategy starts with defining market order winners and qualifiers - developed through an analysis of the competitive market environment - before examining the internal supporting organisational processes. However, the increasing prominence of the RBT in business strategy since the early 1990s has led to operations scholars integrating the logic of the theory into operations strategy models (Mills et al., 2003; Vastag, 2000; Lewis and Gregory, 1996). A number of authors have used the RBT to analyse strategic capability from an operations perspective (Mills et al., 2003; Coates and McDermott, 2002). Although the market-based view and RBT are analysing business strategy from different perspectives, (1) the market and (2) the resource, there is a growing consensus in the operations literature that both perspectives are both necessary and complementary for understanding operations strategy (Slack and Lewis, 2007; Lawson, 2002; Boyer and Pagell, 2000). Indeed, more recent operations strategy models encompass the logic of both the market-based view and RBT (Slack and Lewis, 2007; Hill, 2000).

Although the increase in interest in RBT and operations strategy can be attributed partly to the increasing prominence of the RBT in business strategy, the operations area is at the heart of developing organisational capabilities that can create competitive advantage (Coates and McDermott, 2002). For example, several 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. Focusing on developing capabilities in the operations area should allow an organisation to participate in a range of product markets rather than being confined to particular product markets as determined by the analysis of the competitive market environment. Gagnon (1999) has argued that applying the RBT should enable an organisation to develop and leverage resources in order to create a new set of order winners and order qualifiers. Therefore, operations strategy should support the development of the critical operational capabilities of the organisation. Clearly, applying this logic to operations strategy will influence outsourcing. Focusing on and developing certain capabilities is central to the RBT, which in turn has important implications for activities that should be kept within the firm and which should be external to the firm. Indeed, capability considerations are increasing in prominence in the practice of outsourcing. For example, there is a growing body of literature emphasising the importance of capabilities in outsourcing decisions (Holcomb and Hitt, 2007; McNally and Griffin, 2004).

However, many outsourcing frameworks in the operations area tend to focus on the costs implications of the outsourcing decision. Early approaches on outsourcing in a manufacturing

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3 context - the make-or-buy decision - were principally concerned with applying quantitative  
4 models to evaluate the decision (Culliton, 1956; Higgins, 1955). Many of the quantitative  
5 models have placed considerable emphasis on evaluating the costs associated with the  
6 decision which involves attempting to measure all the important costs associated with the two  
7 alternatives: make or buy (Ellis, 1992; Gambino, 1990). The concept of transaction costs has  
8 also influenced some of the approaches proposed in the literature in evaluating the decision  
9 (Vining and Globerman, 1999; Williamson, 1985). As one would expect, proponents of  
10 approaches influenced by the transaction cost perspective argue that the optimal sourcing  
11 option will be chosen on the basis of transaction cost minimisation. However, some have  
12 challenged the predominance of cost considerations in the outsourcing decision with scant  
13 attention being given to how the decision impacts the long-term capabilities of the  
14 organisation (Holcomb and Hitt, 2006; McIvor, 2005).

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24 More recent outsourcing frameworks argue that a strategic focus should be given to the  
25 decision in an operations context, which involves more than an analysis of costs (Wu et al.,  
26 2005; Fine, 2002; Dekkers, 2000; Canez et al., 2000; Venkatesan, 1992; Welch and Nayak,  
27 1992). For example, Venkatesan (1992) describes the approach adopted at the US engine  
28 manufacturer - Cummins Engine, which introduces the ideas of integrating product  
29 differentiation, an analysis of component families and manufacturing capabilities into  
30 deciding whether processes should be outsourced. The core competence approach – which  
31 has evolved from the RBT - has been extremely influential in distinguishing between  
32 processes that should be kept in-house and outsourced. Quinn (1999) has argued that  
33 effective outsourcing for an organisation involves concentrating on a set of core competencies  
34 where it can achieve pre-eminence and outsourcing other processes which are neither critical  
35 nor the company has a distinctive capability. However, few of these studies in the operations  
36 area sufficiently emphasise the implications of the RBT for outsourcing decisions. The  
37 research presented in this paper seeks to explore how the resource-based theory can assist  
38 with outsourcing decision-making in an operations context.

## 39 40 41 42 43 44 45 46 47 48 49 50 51 **RESEARCH METHOD**

52 A case study approach was chosen to undertake the research. Use of the case study approach  
53 allows an increase in the quality and quantity of data obtained (Gummesson, 1991). The case  
54 study approach allows the researcher to analyse relationships and social processes that is not  
55 possible via a quantitative approach alone (Miles and Huberman, 1994). A single case study  
56 design was chosen because of the explanatory nature of the study, and the level of detail in  
57 the data required. Although a single case study approach cannot offer generalisability in the  
58 statistical sense, it can represent a significant contribution to knowledge by permitting theory  
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3 building, which was appropriate for the research in this paper. An in-depth case study can  
4 make up for the lack of generality by revealing a greater depth of understanding of the set of  
5 events under analysis (Yin, 1994; Stake 1995).  
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10 In-depth case study research was conducted with a telecommunications equipment  
11 manufacturer. For purposes of confidentiality, the company will be referred to as the  
12 Company. This company was chosen for a number of reasons. The Company had already  
13 outsourced a range of areas of their operations. Changes in both the internal and external  
14 environment had led to the Company outsourcing a range of activities to meet the increasing  
15 demands of its stakeholders. For example, the Company had been experiencing increasing  
16 competition and more demanding customers in its business environment. The research team  
17 already had strong relationships with this company. In addition, through the preliminary  
18 interviews the research team established relationships with key personnel in the company,  
19 which facilitated their full access and participation in the research. Gaining full access to  
20 personnel across the Company facilitated the collection of data from multiple informants,  
21 which increased the quality of data collected (Eisenhardt, 1989).  
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31 The first stage of the data collection phase involved gathering data on the background and  
32 overall strategy of the company. This involved gathering data on influences from the industry  
33 environment such as customer demands, competitor actions, technology changes and  
34 government. Particular attention was given to the link between the strategy of the  
35 organization and the drive towards outsourcing. A number of outsourcing decisions were  
36 chosen in the company including *Case 1* – PCB Assembly; *Case 2* - ASICs Design; and *Case*  
37 *3* – Sub-Rack Assembly. These decisions were chosen for a number of reasons. Many of the  
38 personnel who were involved in these outsourcing decisions were still employed by the  
39 company. Furthermore, full access was granted to these personnel, which would facilitate the  
40 collection of data at the level of quantity and quality required.  
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49 A number of sources were used for data collection in the company. The primary data  
50 collection source was via semi-structured interviews. The interview questions were  
51 developed from variables associated with the RBT. In-depth face-to-face interviews were  
52 carried out to examine the presence of these variables on the outsourcing decisions.  
53 Interviews were then carried out with both senior managers who were involved in formulating  
54 strategy and with personnel from a range of functions at lower levels in the company who  
55 were involved in implementing the outsourcing decision. Semi-structured interviews took  
56 place with each of the personnel involved, with the intention that personnel would freely  
57 express their views and experiences on the outsourcing decision. The interviews normally  
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3 lasted from one to three hours. Gathering this data involved a great deal of interaction  
4 between the researchers and the staff of each organization. Data was also collected from a  
5 number of other sources. Firstly, the company provided access to a range of documented  
6 material detailing the rationale for their outsourcing strategies. Archival data in the form of  
7 internal memoranda, annual reports, strategy documents, supplier evaluations, trade and  
8 internal company magazine articles were also collated.  
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14 In relation to data analysis, case studies were developed from the interviews with the  
15 personnel involved in the outsourcing decisions undertaken and the archival data gathered.  
16 Using Eisenhardt's (1989) guidelines on case study analysis, within case analysis and cross-  
17 case analysis was carried out to determine the presence of RBT variables in the outsourcing  
18 decisions. This analysis was important in developing the constructs in the outsourcing  
19 framework. As part of this analysis, follow-up interviews were undertaken to discuss both  
20 earlier responses and those of other informants. These interviews often involved additional  
21 questions based on information obtained from earlier interviews. A key strength of this  
22 approach was that it allowed the triangulation of data from multiple informants. Various  
23 charts, tables and figures were developed and used in the data analysis phase.  
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32 Tests of construct validity, internal validity, external validity and reliability were employed to  
33 validate the research findings (Stake, 1995; Yin, 1994). To ensure construct validity, multiple  
34 sources of evidence including the interviews and archival data were used to triangulate data.  
35 Internal validity was ensured by using within-case analysis and then cross-case analysis to  
36 develop the constructs and the outsourcing framework. Each case was further investigated  
37 through multiple interviews and additional visits to the company to review the findings. To  
38 ensure external validity, the study used replication logic to conduct and analyse the case  
39 study. To increase reliability, all procedures, including the preparation of the interviews and  
40 semi-structured questionnaires and data collection and analysis, were applied consistently  
41 across the outsourcing cases.  
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50 The following sections present the findings from this analysis:  
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- 53 • *The case company and the outsourcing decisions* - this section provides an overview of  
54 the case company and the outsourcing decisions studied.
- 55 • *The constructs* - this section provides an overview of the development of the constructs  
56 based upon an analysis of the case company and the RBT.  
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- *The outsourcing framework* - the constructs were then used to develop an outsourcing framework. A description of the framework along with illustrations from the outsourcing decisions studied and extant literature is presented in this section.

## 10 THE CASE COMPANY

11 The Company had been experiencing considerable change due to the rapidly changing nature  
12 of the telecommunications industry. Changes in the telecommunications industry meant that  
13 the company had to be more responsive to change and in particular focus on reducing time to  
14 market for its products. The Company also placed an increasing emphasis on the adoption of  
15 world-class practices such as integrated product development, a total quality culture, and  
16 continuous improvement. As part of its strategic development, the Company set up a design  
17 facility close to the manufacturing plant for new product development and the re-design of  
18 current products. The co-location between the manufacturing facility and the design centre  
19 enabled design to work closely with the product manufacturing operation. The products and  
20 systems developed in the design centre were technically complex requiring, at various stages  
21 during the development cycle, the involvement of the disciplines of mechanical and thermal  
22 design, electrical and electronic design, software, systems design, printed circuit board (PCB)  
23 design, manufacturing interface, manufacturing support, component and supply management.  
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34 An important element in strengthening the competitive position of the company involved  
35 cultivating the relationship between the manufacturing plant and the design centre. In the  
36 manufacturing site, the role of design affected the whole spectrum of product development  
37 and manufacturing activities, impacting on the success of projects that ranged from the re-  
38 design of existing products to the development of new products. The Company believed that  
39 building the relationship between the manufacturing plant and the design centre avoided a  
40 situation where the site performed the role of a 'screwdriver plant', which carried out  
41 assembly processes only with limited design involvement. Therefore, with design being a  
42 high value adding activity it was seen as increasing the technological capability of the site as  
43 a whole. Another major building block of its business strategy had been the outsourcing of an  
44 increasing number of activities to suppliers including assembly operations, piece part  
45 manufacture and in some cases design.  
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### 54 *Case One*

55 This case study involves the outsourcing of the PCB assembly process. The driving force for  
56 outsourcing this process came primarily from the corporate level of the Company.  
57 Previously, this area was considered to be part of the core business of the Company,  
58 particularly at local level. Performing this process internally allowed the Company to retain  
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3 control of the manufacture and design of the most critical element of the final product. It was  
4 argued that this process had a significant impact on what their customers perceive to be the  
5 most important attributes of product functionality. The PCBs comprising the multiplexor  
6 were designed and manufactured on-site, which enabled close interaction between design and  
7 manufacturing in order to facilitate innovation and re-design for cost reduction on its existing  
8 product portfolio. Through experience this relationship allowed the site to capture the  
9 requirements of customers and translate them into detailed performance specifications. This  
10 was based on an understanding of the linkages between customer requirements, product  
11 specifications, manufacturing and the supply chain, which had been accumulated through  
12 innumerable interactions between engineering, manufacturing, designers and marketing over  
13 time.  
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23 However, analysis of this process internally had revealed that the Company was gradually  
24 losing its level of competence in this area. In particular, the analysis revealed that there were  
25 problems in the area of quality and product performance, which stemmed from  
26 inconsistencies and weaknesses in design. The Company was constantly re-designing PCBs  
27 in order to integrate components with higher levels of functionality at a lower cost. However,  
28 some of these product redesign initiatives were insufficiently formalised which was leading to  
29 quality problems. The Company considered outsourcing both the design and PCB assembly  
30 to improve performance. After careful analysis, it decided to retain the design element in-  
31 house, and outsource PCB assembly. Design of PCBs was regarded as a source of  
32 competitive differentiation, and the Company did not want to divest its capabilities in this  
33 area. The Company believed that it could address the difficulties in design and improve  
34 performance through investing further resource in this area. In addition, the learning and  
35 knowledge accumulated in improving performance in this area could be exploited in other  
36 design areas.  
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48 There were a number of reasons for outsourcing PCB assembly. The Company at local level  
49 was experiencing considerable increases in demand for its portfolio of products, which had  
50 already led to some outsourcing of PCB assembly due to internal capacity constraints. The  
51 capability and scale of suppliers in the supplier market was increasing as more Original  
52 Equipment Manufacturers outsourced PCB assembly processes. Senior management in the  
53 Company believed that a number of these suppliers were in a position to offer higher levels of  
54 service at a lower cost than internally. However, crucially at corporate level the Company  
55 had decided to increasingly move out of manufacturing-related in order to focus on design  
56 and marketing, and were unwilling to invest resource in improving and developing PCB  
57 assembly. Therefore, this area of the business was outsourced to a specialist PCB assembler  
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3 that provided completely integrated outsourcing solutions to leading OEMs in the electronics  
4 industry on a global basis. The Company maintained a single production line specifically for  
5 new product introductions to reduce the risks of losing the interface between manufacturing  
6 and design in the PCB manufacturing process  
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11 The supplier chosen had grown rapidly via a global acquisition and development strategy.  
12 Part of the outsourcing agreement involved the supplier locating a plant nearby that would  
13 dedicate its manufacturing output to the Company. This was a major attraction of the  
14 outsourcing arrangement, as it would also allow the Company to obtain a higher level of  
15 service from the supplier and allow internal staff to transfer to the supplier. Initially, around  
16 one hundred and twenty employees were transferred to the supplier. The Company and  
17 supplier both believed that the transfer of employees and associated knowledge would allow  
18 production to be ramped up more quickly, rather than the supplier recruiting a new cohort of  
19 staff. In fact, in the early stages of the arrangement this was found to allow problems to be  
20 addressed more quickly. For example, the problems that the Company had been having with  
21 quality were still present in the early stages of the arrangement with this supplier and caused  
22 difficulties in the early stages of the relationship. It was found that many of these problems  
23 emanated from the Company for example, weaknesses in procedures to update product and  
24 component re-designs. However, under the outsourced arrangement the supplier committed  
25 additional specialist expertise to work with the Company in order to resolve many of these  
26 issues. Furthermore, the specialist expertise of the supplier enabled the manufacture of more  
27 complex components on PCBs – an area that the Company had traditionally had problems  
28 with.  
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### 42 *Case Two*

43 This case relates to the evaluation of the design capability of the Company for an electronic  
44 component – an Application Specific Integrated Circuit (ASICs). This component was a key  
45 driver in the functionality of each PCB associated with the multiplexor. There were various  
46 components associated with each PCB that gave the multiplexor its functionality. There were  
47 two types of components that comprised PCB assembly:  
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- 53 • *Generic* – these were defined by designers as simple and standardised components that  
54 could be readily sourced from a number of suppliers.
- 55 • *Specific* - these were key components in the assembly of the PCB that could have a  
56 considerable impact on the power and functionality of the multiplexor as well as  
57 accounting for a considerable cost. Examples of such components included Application  
58 Specific Integrated Circuits (ASICs), Field Programmable Gate Arrays (FPGAs) and  
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3 microprocessors. Although there might have been only a few *Specific* components on  
4 each PCB, each of these components could account for over 15% cost of the total PCB  
5 cost. Advances in the design of these components led to the development of a more  
6 functional and lower cost product that could be a potential source of differentiation in the  
7 marketplace.  
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13 Due to increasing customer demand and a high level of competition in the marketplace, the  
14 Company had been under considerable pressure to achieve advances in the design of specific  
15 components. These developments were placing considerable pressures on design resource  
16 within the Company. Senior management in the design centre believed that a more focused  
17 approach should be taken to allocating design resource in areas that could deliver long-term  
18 value for the company. At the same time, suppliers were becoming more competent in the  
19 design of these components, and were actively encouraging their customers to allow them to  
20 design as well as manufacture these components. In fact, some of the competitors of the  
21 Company had already outsourced some of the design for ASICs. However, by divesting its  
22 capability in this area, the Company believed it would potentially lose a source of competitive  
23 differentiation both currently and in the future. An extensive analysis of its own capabilities  
24 in ASICs design relative to its suppliers and competitors revealed that it was marginally more  
25 capable than many of its competitors and suppliers. Also, the analysis revealed that two of its  
26 direct competitors had been investing in this area over the last number of years.  
27 Consequently, the Company had to decide whether to outsource ASICs design to suppliers, or  
28 invest in this area in order to build upon its current capabilities.  
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41 The Company decided to retain this design process, and invest more resource to build upon its  
42 current capabilities. The Company adopted a more focused approach to design that involved  
43 outsourcing the design of less critical components to suppliers, who it believed had stronger  
44 design capabilities than in-house, and then reallocating resource to the design of specific  
45 components such as ASICs. A key part of the strategy for maintaining and developing its  
46 capabilities in ASIC design, involved better leveraging the capabilities of suppliers. Although  
47 suppliers had been consulted during the design process, the Company believed that building  
48 more collaborative relationships with a few of its key suppliers would strengthen its design  
49 capabilities. Previously, the Company made the supplier selection for ASICs manufacture  
50 when the design specifications were completed, rather than at the concept stage of design.  
51 This often created problems during manufacturing as the supplier could not manufacture the  
52 component to the specification required by the Company, thus slowing down manufacture,  
53 and increasing cost. In addition, Company designers sometimes designed a customised  
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3 component even though suppliers offered a standard design that delivered the same level of  
4 functionality.  
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8 Therefore, the Company changed its approach to supplier involvement in design, and selected  
9 suppliers at the concept stage of design, collaborated with the supplier throughout the design  
10 process. The Company believed that this would yield a number of benefits. Although the  
11 Company had been designing the components internally, the design process was influenced  
12 by the current and future capabilities of the supplier in the technology. The Company would  
13 better align its technology requirements with the technology capabilities of suppliers through  
14 intensive communication and information sharing. The sharing of technology roadmaps,  
15 which outline the evolution of the supplier's future capability in a technology, was an  
16 important part of this process, and where appropriate, would allow the Company to use  
17 standard supplier designs without having to design a customised component. Through  
18 working more closely with suppliers, it would design a more functional component, and  
19 reduce the potential for problems in manufacture, and thus reduce cost. Leveraging the  
20 capabilities of suppliers would speed up the development process, and allow the Company to  
21 introduce new products to market more quickly. Effective supplier involvement in this  
22 process was crucial due to the rapid changes occurring in these technologies, and the constant  
23 focus on re-design for cost reduction and greater component functionality throughout the life  
24 of the product.  
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### 36 37 *Case Three*

38 This case concerns the outsourcing of sub-rack assembly – a key electro-mechanical sub-  
39 assembly process. The electro-mechanical manufacturing processes had become  
40 characterised by a high percentage (in some cases as much as 80%) of activities being  
41 outsourced to firms manufacturing systems and components. The sub-rack was the means by  
42 which the PCBs that comprised the multiplexor were housed. The Company assembled a  
43 variety of sub-racks for each multiplexor. Traditionally, the assembly of the sub-rack was  
44 carried out internally with various piece parts and sub-assemblies being sourced from a  
45 number of suppliers. The two key sections of the sub-rack were as follows:  
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- 53 i. Back-Plane Assembly - the back-plane was a large PCB, which acted as the medium  
54 connecting the PCBs in the sub-rack. The back-plane assembly process was carried out  
55 in-house involving a plug and place operation with electronic components such as  
56 resistors, connectors and cable assemblies.  
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- 58 ii. Shelf Mechanics Assembly - the metal piece parts that comprised the fabrication of the  
59 sub-rack. The majority of the piece parts (80%) for the shelf mechanics were sourced  
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3 from a sub-assembler with piece parts, including aluminium side panels sourced from a  
4 specialist metal supplier. This sub-assembler was an engineering company specialising in  
5 supplying the telecommunications industry and was one of the Company's key sub-  
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from a sub-assembler with piece parts, including aluminium side panels sourced from a specialist metal supplier. This sub-assembler was an engineering company specialising in supplying the telecommunications industry and was one of the Company's key sub-assemblers.

In the design process for a new multiplexor, the Company decided to re-design the sub-rack to facilitate the outsourcing of the assembly process to the sub-assembler. With considerable interaction from the sub-assembler, the Company moved towards the design of an all-steel sub-rack, thus enabling the sub-assembler to carry out the majority of the metal manufacture in-house. The sub-assembler would buy in the other metal and plastic piece parts as well as the assembled back-plane from the chosen back-plane supplier. A major factor in selecting this particular sub-assembler was the fact that it had recently opened a plant in a nearby town and was able to provide the Company with an efficient and reliable delivery service. The reasons for the Company moving towards this arrangement included: lower costs; reduction in the number of direct suppliers; less purchasing resource required; shift in responsibility to the sub-assembler for the management of inventory, logistics and quality moved to the sub-assembler; and the potential to further strengthen the relationship with one of its key sub-assemblers.

## THE CONSTRUCTS

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

### *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 Company have shown, focusing on areas that created competitive advantage was a key influence on outsourcing. In relation to Case 2 ASICs, the Company had been building capabilities in areas of design, where it believed it would achieve higher levels of performance than competitors. As Case 3 Sub-Rack Assembly illustrated, many assembly processes were not regarded as a source of competitive advantage, and could be performed at a lower cost by suppliers. Although existing criteria such as value and rarity employed in the RBT 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 RBT is another important influence on

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3 competitive advantage. However, the value and rarity criteria alone do not fully encompass  
4 the implications of outsourcing for competitive advantage. As the outsourcing decisions in  
5 the Company have shown, a construct that encompasses both these criteria is required. For  
6 example, the Company focused on the area of ASICs design because it allowed it to  
7 differentiate its products in the marketplace, and few competitors possessed such a capability.  
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12 The construct of *contribution to competitive advantage* is introduced to integrate this logic  
13 into the outsourcing framework. For purposes of outsourcing, activities are either *critical to*  
14 *competitive advantage* or *not critical to competitive advantage*. Activities that are *critical to*  
15 *competitive advantage* have a major impact upon the ability of a company to achieve  
16 competitive advantage, either through the ability to achieve a lower cost position and/or  
17 create higher levels of differentiation than competitors. Adhering to the logic of the RBT,  
18 building a superior performance position that is difficult to replicate in such an activity, will  
19 lead to sustainable competitive advantage. Case 2 ASICs provides an illustration of this  
20 logic. The Company believed that by developing its existing capabilities in this activity, it  
21 would develop a superior performance capability that competitors would find difficult to  
22 replicate. Alternatively, activities that are *not critical to competitive advantage* have a limited  
23 impact upon the ability of a company to achieve competitive advantage. Although these  
24 activities have to be performed well, and are necessary for serving the needs of customers,  
25 any performance improvements achieved in such activities are unlikely to be a source of  
26 competitive advantage as they are not key differentiators in the eyes of customers. The logic  
27 of the RBT is that such activities are of limited value, readily accessible in the supply market  
28 and easy for competitors or suppliers to imitate. Case 3 Sub-Rack Assembly provides an  
29 illustration of this logic. Capabilities in many assembly processes such as sub-rack assembly  
30 were readily accessible in the supply market, and provided no basis for competitive  
31 differentiation if performed internally.  
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47 Activities that are *not critical to competitive advantage* include activities that have either a  
48 marginal or insignificant impact upon competitive advantage. Resource-based theorists argue  
49 that organizations should focus scarce resource on activities that are valuable, rare and  
50 difficult to imitate. Although activities that have a marginal or insignificant impact upon  
51 competitive advantage are necessary for serving the needs of customers, they are not a means  
52 through which competitive advantage is created, and therefore are potential candidates for  
53 outsourcing. In addition, there are risks in focusing scarce resource on such activities, as this  
54 will divert resource from areas that are *critical to competitive advantage*, and where a  
55 company can build superior performance positions that are difficult to replicate. Activities  
56 that are *critical to competitive advantage* are limited in number and require considerable  
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3 resource and management attention to maintain and develop strong performance positions.  
4 The actions of the Company studied support this logic. A common influence on the  
5 distinction between activities performed internally and those outsourced, was the presence of  
6 resource constraints, and the need to focus on areas that created competitive advantage. This  
7 distinction is also supported by the use of the core and non-core language in the Company.  
8 However, when outsourcing activities that are *critical to competitive advantage*, the potential  
9 for future competition from suppliers has to be considered. For example, organisations in the  
10 Pacific Rim have exploited the trend towards outsourcing by large Western manufacturers to  
11 develop the skills necessary to enter Western consumer electronics product markets such as  
12 PC notebooks and televisions, and compete directly with companies that once were their  
13 customers (McIvor, 2005).  
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### 22 *Relative Capability Position*

23 A central premise of the RBT involves understanding why one firm differs in performance  
24 from another. Some firms gain advantage over others because they conduct certain activities  
25 in a superior manner relative to their competitors. Superior performance in the activity is  
26 considered sustainable where it is difficult for competitors to replicate. Determining  
27 performance in activities relative to competitors was a key concern for the Company studied  
28 in the outsourcing decision. In Case 1 PCB Assembly, even though PCB assembly was  
29 regarded as critical to competitive advantage, the Company recognized that specialist PCB  
30 assemblers could provide higher levels of service at a lower cost. Internally, *Case 3 Sub-Rack*  
31 *Assembly* showed the Company could not compete with suppliers on cost for a range of  
32 assembly processes. Although existing criteria such as organization and rarity in the  
33 resource-based literature are relevant, each of these criteria alone is insufficient for explaining  
34 the implications of performance in the outsourcing decision. Barney's (1991) test of  
35 'organization' is important, as it is concerned with analysing how a firm exploits its resources  
36 to perform activities better than competitors. In addition, an activity in which the  
37 organization is performing in a superior manner relative to competitors, that is rare and not  
38 owned by a large number of firms, is likely to be a source of competitive advantage.  
39 However, the organization and rarity criteria alone do not encompass the implications of  
40 performance in the outsourcing decision. A measure that integrates both these criteria into  
41 outsourcing is required.  
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57 Therefore, the construct of *relative capability position* is introduced. Determining the relative  
58 capability position in an activity involves identifying the performance disparity between the  
59 sourcing organization and competitors and suppliers. For outsourcing purposes, the sourcing  
60 organization can possess either a *higher relative capability position* or a *lower relative*

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*capability position* in the activity. The logic of the RBT is that organizations should 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* construct. Activities in which an organization has a *higher relative capability position* should be performed internally, whilst activities with a *lower relative capability position* are candidates for outsourcing. The actions of the Company support this logic, as it distinguished clearly between areas of their operations in which they possessed superior or weaker performance positions in the outsourcing decision. For example, the Company had been increasingly outsourcing manufacturing and assembly areas in which suppliers had far superior cost positions.

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 *higher relative capability position*. For example, the Company 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 *lower relative capability position*. For example, PCB assemblers could provide PCB assemblies to the Company at a lower cost and higher service level, due to scale economies and 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.

## THE OUTSOURCING FRAMEWORK

The two constructs of *relative capability position* and *contribution to competitive advantage* are integrated into an outsourcing framework as illustrated on the matrix in Figure 1. Figure 1 illustrates how the key variables associated with the constructs influence the choice of each sourcing option. The logic of the sourcing options in the framework is now discussed by providing illustrations from the outsourcing decisions studied in the Company, as well as from the extant literature.

## TAKE IN FIGURE 1

**Quadrant One**

In this quadrant, the sourcing organisation has a lower relative capability position and the activity is critical to competitive advantage. There are a number of sourcing options associated with an activity that exhibits these characteristics.

*Invest to Perform Internally*

This sourcing option involves investing the necessary resources to bridge the disparity between the sourcing organisation and the more competent external competitors or suppliers. The significance of the disparity in performance will have a major influence on this sourcing option. Where the disparity is not significant, there is the potential to invest resources to perform the activity internally. Adhering to the logic of the RBT, the sourcing organisation 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 embryonic stage, and therefore may offer considerable scope for future growth. In addition, analysis of the activity may reveal that the disparity in performance is in an area such as quality or productivity, which can be addressed through an improvement initiative internally. Also, an effective benchmarking exercise may assist in determining what actions need to be taken in order to bring the performance up to a comparable level with external sources.

However, where the capabilities of the sourcing organisation lag considerably behind those of competitors or suppliers, it may be difficult to justify a substantial investment of resources in order to match or advance upon external capabilities. The type of disparity is crucial in determining whether it is feasible to invest the necessary resources to match the superior performance of external sources. For example, if the superior cost performance of a supplier is based upon scale economies then it will be very difficult for the sourcing organisation to achieve such an advantage. Also, capabilities built upon socially complex and knowledge-based resources can be extremely difficult to replicate. For example, research in the pharmaceutical industry has shown that socially complex capabilities are central to competitive advantage in new product development. Henderson and Cockburn (1994) have found that success in new product development is based upon integrating and managing product development across a number of scientific disciplines. The *Invest to Perform Internally* option is most appropriate when the sourcing organisation is in a strong position to bridge the disparity in performance. Also, it must be emphasised that the organisation may

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3 have no other choice because either no capable supplier exists or there is considerable risk in  
4 using an external supplier for such a critical activity.  
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### 8 *Outsource*

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10 This is a suitable strategy where it is both difficult and costly to replicate a superior  
11 performance position held by a competitor or supplier. *Case 1* PCB assembly provides an  
12 illustration of this sourcing strategy. PCB assembly had a considerable impact upon the  
13 ability of the company to reduce costs and provide greater product functionality, and was  
14 regarded as *critical to competitive advantage*. However, a number of external suppliers were  
15 identified that could provide a higher level of service at a lower cost globally. *Case 1* could  
16 not replicate these capabilities, as these service providers were achieving the benefits of  
17 specialisation through serving the needs of a number of customers. Although the superior  
18 capabilities of suppliers was a major influence on the outsourcing of *Case 1* PCB Assembly,  
19 the importance of the activity in the future may be another influence on the choice of this  
20 sourcing strategy. For example, changes in the business environment, such as new  
21 technology or changes in customer preferences may render the activity less valuable in the  
22 future (Barney, 1995).  
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32 This is similar to the concept of dysfunctional resources. Resources that have created value in  
33 the past can become dysfunctional i.e. they prevent change and lead to a lack of innovation  
34 capability. These resources are sometimes referred to as 'core rigidities' (Leonard-Barton,  
35 1992). Also, in certain circumstances the organisation may have no choice other than  
36 outsourcing because of internal capacity constraints. Outsourcing is most appropriate when  
37 the organisation feels the advantage the external source has in the activity is too difficult to  
38 replicate. Conditions in the external environment may favour such an approach. Where the  
39 organisation is operating in an environment that is experiencing considerable change - either  
40 through advances in technology or increased competition - it may be more prudent to  
41 outsource certain activities rather than incur the risk of owning too many activities that may  
42 hinder future growth.  
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### 51 **Quadrant Two**

52 In this quadrant, the sourcing organisation has a higher relative capability position and the  
53 activity is critical to competitive advantage. In this instance, there are the following two  
54 sourcing options.  
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*Perform internally and develop*

This sourcing option involves performing the activity internally and further developing future capability. *Case 2* ASICs design provides an illustration of this sourcing strategy. The company believed that this area was critical to competitive advantage and analysis of competitors and suppliers revealed that it possessed a higher relative capability position. Keeping such an activity internal is most appropriate when an organization is in a strong position to build and sustain a performance advantage over time. Indeed, the Company believed that investing in this area would allow the company to build and sustain a strong performance position. A number of RBT 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. Where an advantage is based on capabilities that display causally ambiguous characteristics, it will be difficult for competitors to replicate such an advantage.

In addition, the superior performance position in the activity may be based upon a long and complex learning process. When there is no shortcut or straightforward means of carrying out this process, it is referred to as path dependent (Arthur, 1989). For example, consider a company with a strong quality position in a particular process. Such a capability has been developed over a long period of time through the many interactions of people within the company that are either directly or indirectly responsible for the quality of the process. Therefore, it is extremely difficult for a competitor to quickly replicate such a strong position. It is also important to assess whether the current advantage can be strengthened by further developing the capability in the activity in order to limit the likelihood of competitors matching performance levels possessed by the sourcing organisation. For example, a potential constraint to internal development is a lack of skilled labour or financial resources. Clearly, keeping the activity internal is the most appropriate when the sourcing organisation is in a strong position to sustain its performance advantage over time. Also, it may not be possible to outsource such an activity because of a lack of suppliers in the supply market that can meet the performance levels required in the activity.

*Outsource*

Ideally, an organisation 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 organisation is not

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3 sustainable and can be quickly replicated by competitors. For example, many advantages  
4 attained from innovations in computer hardware are typically very short-lived since  
5 competitors can rapidly replicate or any advance upon any such innovations (Mata et al.,  
6 1995). Also, it may be more prudent to focus on other activities in which the organisation  
7 possesses a stronger performance position and which are more critical to success in the future.  
8 Increasingly, many organisations are recognising that competitive advantage can be achieved  
9 in the activity of specifying and integrating external services and other purchases, rather than  
10 in assembly and production of the goods themselves.

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18 Companies such as Dell and Cisco Systems in high technology industries have been pursuing  
19 similar arrangements with their suppliers. These companies outsource much of the product  
20 design to specialist design companies. Also, the majority of manufacturing is outsourced  
21 whilst maintaining control over final assembly, test and customisation of the end product to  
22 customer requirements. For example, Dell believes that many of these activities created little  
23 value for the end customer and can be more readily sourced from the supply market (Dedrick  
24 and Kramer, 2005). A number of carmakers such as BMW and Volkswagen are pursuing  
25 similar strategies in their use of modular production. In many cases, suppliers no longer  
26 simply manufacture parts, but design and develop entire sub-assemblies – often referred to as  
27 modules. For example, Intier supplies the complete interior modules for the 6-Series BMW.  
28 Modularity has allowed the carmakers to outsource production in order to convert fixed costs  
29 into variable costs; reduce labour costs and take advantage of scale economies at suppliers  
30 (Holweg and Pil, 2004).

### 40 41 **Quadrant Three**

42 In this case, the sourcing organization has a lower relative capability position than  
43 competitors or suppliers in an activity that is not critical to competitive advantage. This  
44 quadrant can include the many straightforward activities required by the sourcing  
45 organisation. The actions of the Company in the *Case 3 Sub-Rack Assembly* outsourcing  
46 decision provide an illustration of this sourcing strategy. The Company had been increasingly  
47 outsourcing manufacturing and assembly processes to suppliers with lower cost bases.  
48 Essentially, these activities fulfil none of the tests of a resource that is a source of competitive  
49 advantage i.e. they are not valuable, rare, nor costly to imitate. Such activities can be readily  
50 sourced in the supply market and therefore cannot be a source of competitive advantage.  
51 Many companies fail to appreciate the opportunity costs of investing in activities that are not  
52 critical to business success. For example, in a manufacturing context continuing to produce a  
53 component internally may require considerable management and engineering resource. In  
54 fact, due to cultural and historical issues, there may be a prevailing view that everything can  
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3 be manufactured in-house. The central premise of the resource-based theory is that  
4 organisations should 'stick to their knitting', with the decision to perform activities internally  
5 based upon capability considerations. Since an organisation has a basic area of competence,  
6 gradually accumulated through experience, this becomes the source of advantage as well as  
7 the competitive constraint (Madhok, 2002). Overextending the scope of its activities into  
8 diverse areas not only damages the strength of its competence, but also increases the costs of  
9 performing such a diverse range of activities internally due to the lack of experience and  
10 expertise in these areas.

#### 17 18 **Quadrant Four**

19 In this case, the sourcing organization has a higher relative capability position than  
20 competitors or suppliers in an activity that is not critical to competitive advantage. The  
21 sourcing organisation has the following sourcing options.

- 26 • *Outsource* - Although the sourcing organization is more competent than competitors, the  
27 activity is not central to competitive advantage. Therefore, adhering to the logic of the  
28 RBT, the organization should consider externalising such an activity, and focus resources  
29 on building capabilities in activities that are more critical to organizational success. A  
30 potential strategy option involves exploiting the capability in this area, by creating a spin-  
31 off business, which specializes in this area of operation. For example, in the automotive  
32 industry, advances in engineering and production technologies have allowed  
33 manufacturers to exploit supply chain capabilities, through spinning off parts of their  
34 operations into newly formed independent suppliers (Fine, 1998). However, where there  
35 is a lack of potential to develop this area as a separate business, the sourcing organisation  
36 may have to consider developing the capabilities of a supplier to the performance levels  
37 achieved internally. There are a number of ways of pursuing this strategy including a  
38 supplier development programme or transferring employees and equipment to the most  
39 suitable supplier.
- 40 • *Keep internal* – where outsourcing is not possible due to the lack of capable suppliers, the  
41 activity will have to be retained internally. As with many outsourcing decisions, there  
42 may be internal constraints such as workforce resistance to prevent outsourcing.

#### 55 56 **DISCUSSION**

57 The findings from the research have important theoretical implications. The findings have  
58 shown that the RBT is a valuable theory for understanding the complexities of the  
59 outsourcing decision in a manufacturing context. RBT variables were present in the  
60 outsourcing decisions studied in the case company. In the case of the areas that were

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3 outsourced, these decisions were motivated by presence of resource constraints within the  
4 Company and more competent suppliers in the supply market. Many manufacturing  
5 processes had become non-core, particularly in cases where it could be demonstrated that  
6 suppliers might undertake the processes at a lower cost. In the case of outsourcing the PCB  
7 assembly process, although it was previously regarded as a core area of the business, there  
8 were more competent suppliers in the supply market able to perform this process at a lower  
9 cost. Whilst in the sub-rack outsourcing case, the Company re-designed the assembly to  
10 facilitate outsourcing to an independent supplier. Alternatively, in the case of the design  
11 process, the Company believed that it had to invest resource and develop an area where it had  
12 some level of competence, and which was important to both the current and future  
13 competitive position of the organisation.  
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23 There were a number of important influences internally in both the Company and the external  
24 environment that influenced the logic of the outsourcing framework. Firstly, rapid growth for  
25 its product portfolio and time-to-market pressures meant the Company could only specialise  
26 in a limited number of areas. As a result of changes in technology, the Company believed it  
27 achieved a greater level of flexibility by outsourcing activities to specialists, rather than  
28 performing the activities internally. Furthermore, this decision was based on the view that  
29 specialists could achieve scale economies through serving a greater number of customers.  
30 Secondly, the product architecture also had an important influence on the outsourcing  
31 decision. In contrast to automotive manufacturing where products have an integral product  
32 architecture (Sako, 2005), the Company assembled products that were relatively modular and  
33 therefore this level of modularity enabled the Company to draw a clear boundary between its  
34 organisation and its supply base, particularly as exemplified in the case of the sub-rack  
35 outsourcing process. In general, in the electronics industry, modular product architecture has  
36 facilitated the segmentation of end products into modules, which has facilitated a high level of  
37 outsourcing (Sturgeon, 2002).  
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49 The outsourcing options in quadrants 1 and 2 of the outsourcing framework present  
50 companies with a very difficult decision, as they are outsourcing activities that are critical to  
51 competitive advantage. Once such activities are outsourced it is extremely difficult to  
52 develop the capability again in-house. In addition, there is the potential for competition from  
53 suppliers in the activity in the future. However, the outsourcing framework reflects the  
54 growing trend towards relational and alliance building approaches in outsourcing  
55 arrangements as indicated by the sourcing options in quadrants 1 and 2 as shown in Figure 1.  
56 A growing body of literature exists in the area of inter-organisational relationships (Casson,  
57 1998; Dyer and Singh, 1998; Poppo and Zenger, 1998). Proponents of this literature –  
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3 sometimes referred to as the relational view – propose it is a means of understanding how  
4 firms can gain and sustain competitive advantage. The relational view has evolved as an  
5 extension to the RBT. Dyer and Singh (1998) have argued that it is possible for organisations  
6 to combine resources in unique ways across organisational boundaries to obtain an advantage  
7 over their competitors. The relational view argues that the firm can develop valuable  
8 resources by carefully managing relationships with external entities including suppliers,  
9 customers, government agencies and universities. Therefore, a firm can gain and sustain  
10 competitive advantage by accessing its key resources in a way that span the boundaries of the  
11 firm. Competitive advantage can be embedded in a set of relationships across the boundaries  
12 of firms, rather than residing inside an individual firm. As a consequence, strategy scholars  
13 have been analysing the importance of governance mechanisms such as trust and the  
14 importance of resources and capabilities of suppliers and customers (Kaufman et al., 2000;  
15 Lorenzoni and Lipparini, 1999; Gulati, 1999).  
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26 A limitation of the outsourcing framework presented in this paper is that it is derived  
27 principally from the logic of the RBT, which pays insufficient attention to supply market  
28 conditions. The findings illustrate that the RBT alone does not provide a theoretical  
29 framework to understand fully the complexities of the outsourcing decision. Adhering to the  
30 logic of the RBT alone means that all areas of the business in which the sourcing organisation  
31 cannot develop a superior performance position should be outsourced, and where appropriate  
32 collaborative relationships should be pursued with suppliers. However, this fails to consider  
33 conditions in the supply and the potential for opportunism from suppliers. Conditions in the  
34 supply market and the potential for opportunism from the supplier during the contract are  
35 important considerations in outsourcing decision-making. Although RBT considerations are  
36 prominent in the practice of outsourcing in an operations context as revealed by the findings,  
37 some of the principles associated with transaction cost economics are also pertinent to the  
38 analysis (Williamson, 1985).  
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49 Transaction cost economics focuses primarily on selecting a sourcing arrangement to limit the  
50 exposure of the sourcing organisation to opportunism. For example, in the PCB outsourcing  
51 case, if the relationship with the supplier had broken down due to the initial quality problems,  
52 the Company would have incurred substantial costs in order to switch the business to another  
53 supplier. However, these initial problems were resolved on a collaborative basis. The  
54 findings in this case also emphasise the need to extend the analysis to consider the influence  
55 of collaborative buyer-supplier relationships on outsourcing processes. The importance of  
56 collaboration in buyer-supplier relationships has led to a growing body of literature in the area  
57 of inter-organisational relationships (Bensaou, 1999; Ellram and Edis, 1996).  
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5 The findings have identified another weakness of analysing outsourcing solely from the  
6 perspective of the RBT. This theory is based primarily on economic rationale, and pays little  
7 attention to the political context of an organisation in the outsourcing decision.  
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10 Organisational politics involves the strategies that individuals employ in order to obtain and  
11 use power to influence organisational goals in order to further their own interests and  
12 ambitions (McIvor, 2005). Political considerations played a role in some of the outsourcing  
13 decisions studied. This is an area of outsourcing research, which requires further  
14 examination. In particular, it would be valuable to carry out in-depth case study analysis to  
15 understand more fully the relationship between and the relative emphasis of economic  
16 rationale and political behaviour in understanding outsourcing decision-making.  
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## 22 23 **CONCLUSION**

24 This paper has argued that the principles associated with the RBT provide a valuable  
25 theoretical lens for understanding the outsourcing decision in a manufacturing context. In  
26 particular, the outsourcing framework developed provides valuable guidance on deciding  
27 whether activities should be internalised within the boundaries of the firm or outsourced  
28 based upon organisational capability considerations. Linking the RBT with the outsourcing  
29 decision ensures the decision is linked with organisational performance and in turn  
30 competitive advantage. The outsourcing framework addresses a number of important  
31 questions that have significant implications for outsourcing practice in the operations area:  
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- 39 • How can outsourcing be employed to achieve improvements in performance?
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- 41 • Should an organization maintain and build upon a superior performance position in an
- 42 activity, or outsource the activity and leverage the capabilities of suppliers?
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- 44 • Why can an organization not achieve the performance levels attained by competitors or
- 45 suppliers in the activity?
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- 47 • What are the resource implications of investing in an activity to perform it internally?
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- 49 • How can the outsourcing relationship with the supplier be managed to jointly build
- 50 difficult-to-imitate capabilities?  
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54 There are a number of limitations with the research. In considering only a single case study,  
55 there was no attempt to develop or test research hypotheses or propositions. Therefore, it is  
56 difficult to emphasize the significance of the research to a wider organizational population.  
57 Also, as is often the case with case study research, when combining much data from a wide  
58 variety of sources, and over a long time period, the researchers' analysis of the findings is  
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3 often a significant 'reality' filter (Gummesson, 1991). The main limitation of the outsourcing  
4 framework is that its applicability has only been assessed by one research group in a limited  
5 number of outsourcing instances. Therefore, the value of the framework will not be fully  
6 assessed until it is rigorously tested by other researchers and in other research settings.  
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11 The findings have shown that further research is required in a number of areas to examine the  
12 relationship between the RBT and outsourcing. In particular, it is important to assess the  
13 validity of the RBT as a means of understanding outsourcing in a wider number of  
14 organisational contexts. Already, the framework is being examined in a number of other  
15 organisations. This research is being carried out at the activity level within these  
16 organisations rather than at the corporate level. An often-cited weakness of RBT approaches  
17 is that many of the exemplars are from a corporate level with scant attention being given to  
18 how capabilities are developed and sustained at an operational level. This is particularly  
19 important in an outsourcing context, as some organisations have embarked upon outsourcing  
20 without understanding the underlying business processes and interdependencies with other  
21 business processes in the organisation. Furthermore, the analysis has been extended to  
22 include additional considerations on outsourcing decision-making including the influence of  
23 supply market conditions and the development of collaborative buyer-supplier relationships.  
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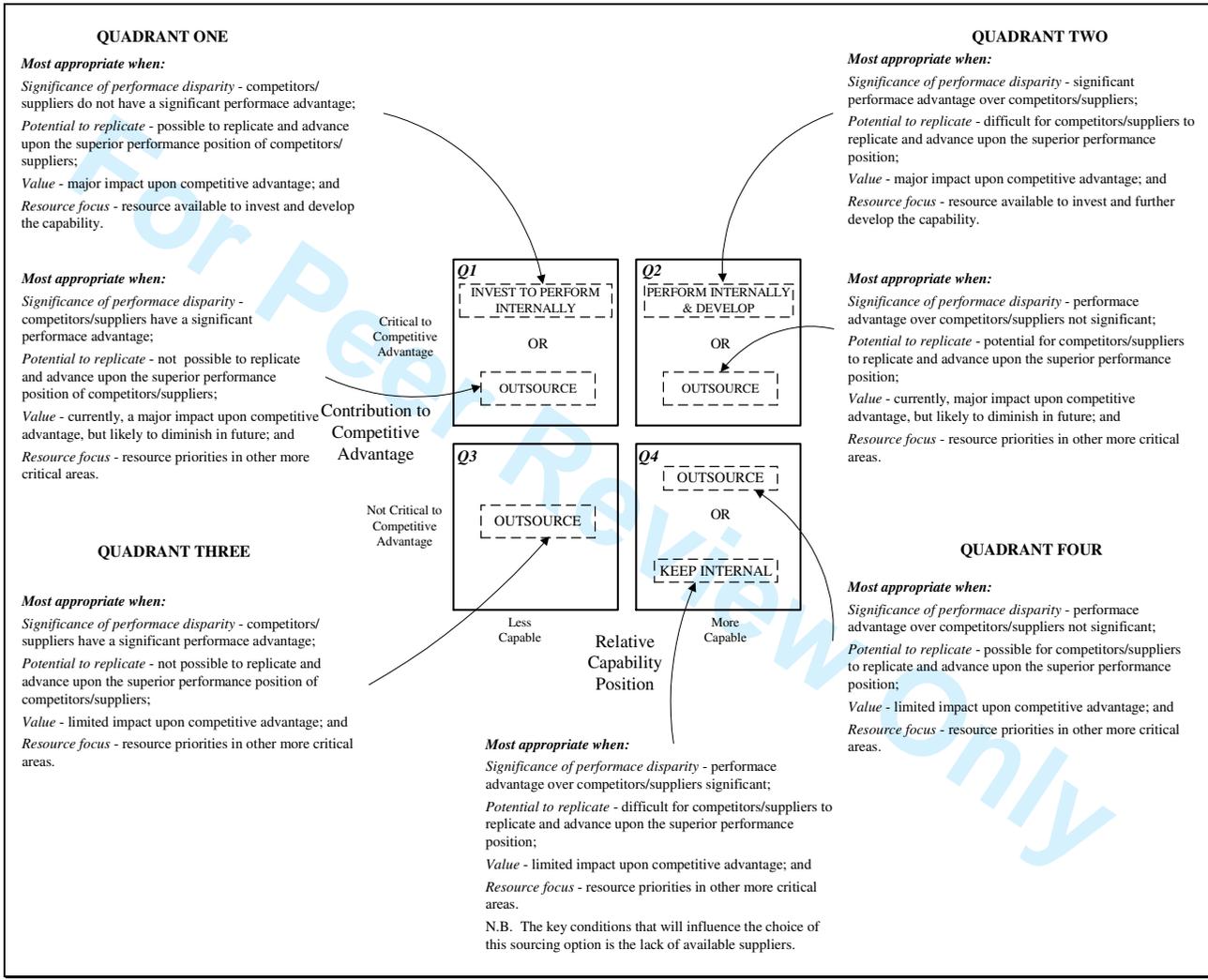


Figure 1. The Outsourcing Framework